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ABSTRACT

The curriculum guide (a revision of a 1969 edition) is for teachers of driver and safety education and others interested in promoting its objectives. Part 1 briefly outlines the organization and administration of such a program while Part 2 deals with curriculum and the components of on-highway tasks, readiness tasks, and improvement tasks. Concepts, objectives, student performance, learning activities, and resources are identified for various units and subunits. Part 3 includes skill lessons of in-car instruction that use a task analysis approach and diagrams. Other sections consist of special teaching aids and visual aids and reference materials that coordinate with units. The 33-page appendix includes various sample forms, legislation, and an addendum on motorcycle safety education that consists of organization and administration, curriculum, and on-cycle instruction. (EA)

CE

a curriculum guide for

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in Kansas secondary schools

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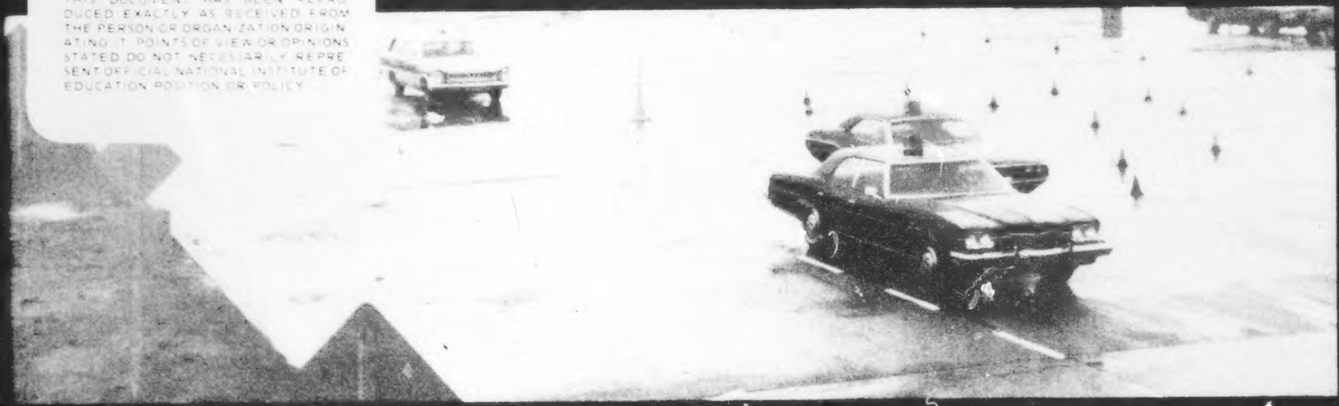

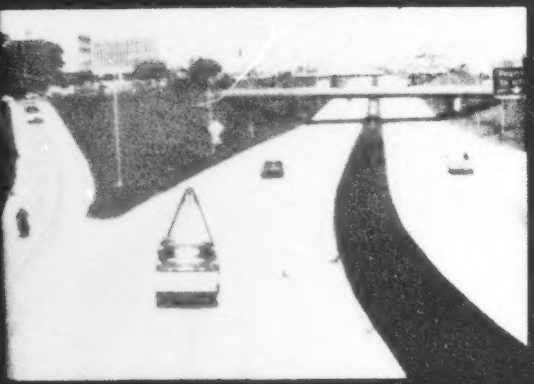

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FOREWORD

This guide, a revision of "A Guide for Driver Education in Kansas Secondary Schools" published in 1969, has been developed for the use of teachers of driver and traffic safety education and others interested in promoting its objectives.

The State Department of Education is indebted to Dr. Jerry Merrell and Kansas State University for organizing and distributing an excellent guide which they prepared.

The guide will serve to accelerate improvements in driver and traffic safety education as a part of the highway safety programs in Kansas and the nation.

C. TAYLOR WHITTER
Commissioner of Education

ACKNOWLEDGMENTS

The State Department of Education wishes to thank members of the administration and faculty of Kansas State University in developing this guide. It has been written especially for those persons who are immediately responsible for the driver and traffic safety education phase of curriculum. It is hoped that they find it as useful as did those who participated in its development.

We further wish to express appreciation to Dr. Arnold Moore, head of the Department of Curriculum and Instruction, Dr. Jerry Merrell, Driver and Traffic Safety Education Professor, Kansas State University, who were instrumental in organizing the guide and to the participants who gave so generously of their time and talents.

The **Resource Curriculum in Driver and Traffic Safety Education** published by the Automotive Safety Foundation served as a model for the general format of this guide. Kansas is grateful to the Automotive Safety Foundation for granting permission to use portions of its publication.

Our sincere thanks to those persons in the Kansas Highway Safety Coordinating Office in Topeka for their generous support and expertise; without them, this guide would not have been possible.

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Part 1. Organization and Administration

A. THE HIGHWAY TRANSPORTATION SYSTEM

The operation of motor vehicles takes place in the highway transportation system (HTS). This highway transportation system, invented by man, is one of the elaborate and important systems which makes our present way of life possible. The education of citizens for the safe and efficient use of such a vital system is now considered a necessary and legitimate function of the public schools.

The purpose of the highway transportation system is to move people and goods from one place to another in a relatively safe, efficient, and convenient manner. As a system, the HTS consists of an assembly of elements that carries out the desired functions by the interdependent operation of the component parts. The major components are: the people who use the system, the vehicles that carry people and goods, and the highway environment in which the vehicles are operated.

In this kind of man-machine system whose total system functioning is critically dependent upon the performance of the vehicle operator, errors and malfunctions can result in the breakdown of the overall operation of the system. The number and type of driving errors and the time at which they occur will determine the degree of safety for the HTS operations.

Since automobile driving takes place in the HTS and the various components influence each other, the entire system must be considered. This calls for the use of the systems analysis technique. Systems analysis is a kind of problem-solving technique that can be used by curriculum designers for better decision-making. A picture of the functional requirements of the system as a whole and those of the major components unfolds when using systems analysis methods. This technique also makes possible the delineation of operator interaction with system equipment and other environmental factors required during typical trips. Within this context of information, the performances requirements of the human operation can be defined. These definitions should then guide the development of an effective instructional program.

The present instructional program for driver and traffic safety education has evolved primarily from the use of the accident causation approach. The problem in the use of this approach is that the real causes of traffic accidents have been found to be quite elusive. Auto accidents are of many types and are the result of a variety of circumstances which exist before and at the time of the accident. They occur in a rather complex system where the continuous interactions of elements can generate an infinite number of situations and conditions. In addition to these many situational factors, traffic accidents may also be a function of such factors as personal characteristics, experience and training, operating procedures, equipment, and fatigue or other temporary driver conditions. Therefore, it has been found that the exact causes cannot be accurately assigned to even a small number of antecedents.

Based on the analysis of the driving task, it should be obvious that the role of the driver in the HTS is primarily that of processing information and making decisions. Physical skills are important, but they are easily mastered by almost everyone. Using the brake, accelerator, and steering at different times to varying extents are not particularly difficult skills. The difficult aspect of the driving task is the mental ability involved in deciding what control to use, when to use it, and to what extent. Involved also are the social responsibilities and assessments of risks. The fact that the modern high-powered automobile is relatively easy to operate from a physical standpoint makes the job of education and training more difficult because one first has to overcome the belief that there is nothing to it.

By its very nature the analysis of the driving task contributes to the formulation of instructional objectives in terms of desired behavioral outcomes. The basis for selecting the required concepts and generalizations is also provided. In addition, the method leads to a structure for classifying and organizing knowledge that can be useful for organizing and administering the instructional program. By using this approach there should evolve a program of training and education that is comprehensive, relevant, motivating, and measurable.

The general objectives of the HTS is the safe and efficient movement of people and goods from one location to another. This objective is accomplished by persons who operate vehicles and communicate with other users in a network of streets and highways under a variety of contingencies. It is important that each user clearly understand this system objective and that his actions are in accord. Furthermore, they should recognize their role in achieving this system objective and the consequences of errors on their part or on the part of others.

The goal of driver education is the development of traffic citizens who will be competent and responsible users of the highway transportation system. To achieve this goal the following general objectives as derived from the driving task model are suggested:

a. The students are able to recognize and define automobile driving as primarily a mental and social task involving the interaction of persons and vehicles with the highway environment in a rather complex highway transportation system whose malfunctions result in serious economic and social consequences.

b. The students can apply in a variety of highway traffic situations learned information about traffic laws and regulations, vehicle capabilities and limitations, vehicle operational practices, and the highway environmental features.

c. The students can demonstrate those mental and physical competencies, including appropriate strategies and tactics, for driving proficiently along safe and legal pathways in a variety of highway system environments under varying conditions and contigencies.

d. The students have information that will enable them to determine a set of strategies for preventing various psychological, physiological, social, or other factors from having an adverse effect on one's ability to perform the driving task in a proficient manner.

e. The students can define the legal and moral responsibilities of highway users necessary for the safe and efficient operation of the highway transportation system; they have those concepts and values which will predispose them to accept such responsibilities.

B. THE COURSE

1. Course Approval

To have a course approved, a school system must apply to the Driver and Traffic Safety Education section of the State Department of Education. The following conditions must be understood and accepted before any application will be considered:

a. The course shall include both classroom and behind-the-wheel instruction with the latter provided only to those students who have completed or are currently enrolled in the classroom phase of the program.

b. In no case shall a course consist of less than thirty (30) clock hours of classroom instruction and six (6) hours of behind-the-wheel instruction or its equivalent. (Refer to Unit IV Sections B and C.)

c. Behind-the-wheel instruction will not be given to students who are less than 14 years of age, and all students enrolled for such training shall have the required "Instruction Permit" or a valid vehicle operator's license.

d. Arrangements will be made to secure the permission of parents or guardians before students are permitted to begin behind-the-wheel instruction. (See Appendix A.)

e. The school has ascertained through the State Department of Education that the teachers who will be assigned to teach all phases of driver and traffic safety education have been approved.

2. Time Allotments and Credits

To fulfill the minimum requirements of thirty (30) clock hours of classroom and six (6) clock hours of behind-the-wheel instruction. The present trend is toward more than 30 hours of classroom instruction since it is extremely difficult to cover the essential material during such a short period of time.

It is recommended that a school system schedule the course as a separate subject and grant credit allowance when approved by the State Department of Education.

3. Scheduling

No single formula has been developed to overcome all the difficulties which may be encountered in scheduling driver and traffic safety education courses. Schedules vary from school to school, and there is no satisfactory pattern that will suit all schools. Some of the basic factors which should be considered in developing schedules include:

a. the type of program to be offered.

b. its relationship to the total school program.

c. number of students to be accommodated.

d. availability of students.

e. length of time per class period.

f. number of weeks per semester.

g. recommended requirements.

h. availability of qualified teachers and needed equipment.

Various studies indicate that it is desirable to have classroom and driving instruction taught concurrently during regular school hours. It is suggested that the course be offered during a concentrated term of five periods per week for twelve weeks, or three times per week for one semester. The most effective programs are scheduled on a semester basis. However, those that operate for a complete school year are also acceptable. Fragmented programs meeting only once a week for an extended period, for example, are less successful.

C. THE TEACHER

1. Qualifications

Before a school administrator hires or assigns someone to teach driver and traffic safety education, he should consider that instruction in this field involves not only the teaching of skills, but the development of habits and acceptable patterns of behavior. Due to the seriousness of the outcome and because of the semi-technical, non-routine nature of this course, mediocre teachers have no place in the field.

In addition to the general abilities and competencies that are expected of all teachers in our public school system, teachers of driver and traffic safety education shall possess the following qualifications:

a. A valid Kansas driver's license with a satisfactory driving record.

b. A bachelor's degree from an accredited institution of higher education.

c. A certificate valid for teaching in the secondary schools of Kansas.

d. Completed special training in driver education as follows: Driver education, six semester hours; general safety, three semester hours; psychology, three semester hours; and six semester hours selected from such courses as visual education, auto mechanics, sociology, and other courses dealing with human relations, such as problems in American democracy, law enforcement, traffic problems and court procedures. An instructor who meets Kansas requirements for teaching driver education prior to or during the 1966-67 term of school remains eligible as a teacher of driver education, provided the teacher remains in the same position and school; provided he had been employed to teach driver education for one or more terms during the past six years.

2. Certification Approval

Teachers who are certified to teach in the secondary schools of Kansas may qualify for a coding to teach driver and traffic safety education by completing an approved college program. In order to secure this coding, a school district must file an official college transcript and the

"Preliminary Driver Education Program Report" with the Director of Driver Education of the State Department of Education. Out-of-state college graduates shall file a college transcript indicating satisfactory completion of all requirements in traffic safety education which has been approved by the State Department of Education.

D. THE STUDENT

1. Learner's Permit

a. Background

(1) Kansas law permits the Kansas Department of Revenue, Division of Vehicles, Topeka, Kansas 66626, to issue an Instruction Permit to persons enrolled in an approved driver education course at 14 years of age.

b. General information

(1) The driver education instructor should request sufficient number of DC-229 forms (Refer to Appendix C-1) well in advance of the in-car instruction.

(2) Upon receiving the DC-229 forms, the instructor is to complete them (typed or neatly printed in ink) with the required fees to the Division of Vehicles.

(3) On receipt of the completed DC-229 forms and the required fees, the Division will forward the correct number of DC-13 forms (See Appendix C-2) and DC-1 forms (See Appendix C-3) to the instructor to be filled out by the school officials.

(4) Restricted instruction permits are valid only while the student is in a dual-pedal controlled car and while accompanied by and under the control of a teacher certified by the State Department of Education to teach the in-car instruction phase of driver education. It is suggested that a learner pass an in-car and a rules of the road examination before being issued the instruction permit.

(5) The DC-13 form is a permit to drive during the in-car instruction and can be endorsed by the driver education instructor to permit the student to drive when accompanied by a licensed parent or guardian. This permit is invalid upon course completion or removal from the course.

(6) Once a student has withdrawn or dropped a course and has failed to surrender his permit, his name should be submitted to the Division of Vehicles indicating his action.

c. Examination for Driver's License

(1) The holder of an instruction permit shall be entitled to receive a vehicle operator's license (restricted, if under 16 years) upon satisfactory completion of an approved driver education course. He shall be issued Form DC-1, "Certificate of Completion" upon satisfactory completion of the course.

(2) When making application for a license, the holder of an instruction permit upon satisfactory completion of a driver education course should immediately present to the examiner the DC-1 form and his birth certificate. The applicant will be given an eye examination and, if passed, will be issued the proper license. The applicant must be accompanied to the examining station by a parent or guardian if under the age of 16 years. **Please Note: The DC-1 is not a license or permit to operate a motor vehicle.**

2. Eligibility

a. Records show that most young people in Kansas secure drivers' licenses as soon as they reach the legal driving age or very shortly thereafter. Consequently, the course should be made available to all students when they approach or attain the minimum eligible licensing age.

b. It is recommended that the course be offered at the grade level students' attain minimum local and state licensing age regulations. It must be noted that Kansas does provide instruction permits to students at age 14, but some ordinance cities do not recognize such permits under ages 15 or 16.

c. Student selection should be governed by age, with those students who have already reached 15 (or older) having priority. The recommended procedure in this case is to maintain a current list of eligible students with the base being regulated by minimum school, local, or state age requirements.

d. Those students who have already been licensed should also have the opportunity to enroll in the course, if schedules permit. Studies indicate that young people who have taken part in good driver education programs have above average driving records and are involved in fewer accidents and violations than untrained drivers.

E. THE DRIVER EDUCATION CAR

1. Type

It is recommended that late model, four-door cars with automatic transmission be used for driver education. Experience has shown that better results can be obtained by using cars with automatic transmission. Once the fundamental skills of starting, steering, and stopping have been mastered, the ability to shift gears can be readily developed. In the event that a school system has several driver education cars, one should be equipped with conventional transmission.

2. Procurement

The cars to be used in a driver education course can be leased, rented, borrowed or purchased. A high school having a qualified teacher and an approved program usually can obtain a dual-control practice driving car from a local dealer without charge, except for maintenance cost, insurance and fuel.

Negotiation for the loan or lease of a car should be considered and discussed between the local dealer and the school district. The American Driver and Traffic Safety Education Association and the American Automobile Association have been most cooperative in assisting high schools to procure dual-control cars. Agreement forms on driver education cars can be obtained from the Driver and Traffic Safety Section, State Department of Education. (See Appendix B-1).

Under the lease plan, schools pay the agency furnishing the cars on a monthly or yearly basis. Plans of this nature should be based upon a written contract stipulating the lease agreement with a full understanding between the agency furnishing the car and the school involved.

A few school districts may desire to purchase their cars outright on a bid basis. In some respects, this plan is more desirable than any other since the school has complete control and the car is available the year round, as is other instructional equipment.

3. Special Equipment

All driver education vehicles must be equipped with dual-brake control (clutch, brake, and accelerator in standard transmission vehicles), seat belts for each occupant, shoulder belt restraints for front seat occupants, and visual identification that is adequate to identify the car as being used for student instruction. The following additional equipment is recommended for the proper care of the vehicle and the safe, effective conduct of the driving phase of the program:

a. Floor mats

b. Seat cushions

c. Outside mirrors on each side

d. Inside rearview mirror for the instructor

e. Engine cut-off switch

f. First aid kit

g. Fire extinguisher

h. Equipment needed for special conditions

4. Insurance

All driver education cars must be adequately covered by insurance because risk can only be minimized, not completely eliminated. Before permitting a driver education car to be used, the principal and instructor must be certain that adequate insurance is provided for protection of the school, the teacher, and the student. A minimum of coverage should include bodily injury and property damage liability insurance with a suggested range of

a. $100,000 to $300,000 bodily injury liability.

b. $25,000 or more property damage

c. Full comprehensive protection covering theft, fire, glass breakage and vandalism.

d. Collision protection, $50 deductible recommended.

It is also suggested that a medical rider be secured to pay the medical expenses of anyone injured in an accident involving the insured car. Each school district should provide adequate insurance coverage for driver education instructors.

If the school operates more than one vehicle, it is recommended that it check the possibility of reduced rates through a fleet policy.

5. Administrative Policies

The school system shall conform to the stated policies enacted by the Kansas Legislature governing the circumstances, times, and persons concerned with the use of vehicles in driver and traffic safety education courses.

a. The school shall apply for title and registration with the County Treasurer. The County Treasurer shall issue a plate and decal with the words "driver education" appearing on it. The decal is to be affixed to the said plate.

b. The State Department of Education will list the schools having approved Driver and Traffic Safety Education courses as reported by the Board of Education on July 1, 1973 and on each July 1 thereafter, and send such list to Division of Vehicles.

c. No school shall have more than one free loan for each certified instructor in Driver Education, unless there is an approved program using a Multi-Vehicle Range. Each such instructor must have an assignment in Driver Education. In cases where there is an approved program in Multi-Vehicle Range Instruction, the State Department of Education will certify the number of vehicles needed.

d. No person shall use a free loan vehicle except during Driver and Traffic Safety Education course instruction. Any person using the free loan car for purposes other than for such purpose will be fined not less than $50.00 for each offense.

e. Any school district which officially sanctions use of the free loan car by drivers other than students enrolled in a Driver Education course or the instructor of such course will lose its rights for any reimbursement of such course.

f. Institutions giving teacher instruction courses will be subject to the same regulations as are the secondary schools except that cadet teachers may drive the free loan car as a part of their assignment in an instructional course in Driver and Traffic Safety Education and while under supervision of a certified teacher.

g. All law enforcement agencies shall have the authority to enforce this law.

h. This act shall take effect and be in force from and after its publication in the statute book.

6. Registration and Certificate of Title

Kansas law relating to motor vehicles stipulates that all vehicles must be properly registered and titled. No driver education vehicle should be permitted on the road unless the registration is on hand and readily available.

7. Maintenance

If a vehicle is procured on a loan, lease or rental basis, it is imperative that the car be returned in good condition on the expiration date. The recommended maintenance procedures should include:

a. Storing the cars in a garage when not being used.

b. Cleaning interior and exterior at regular intervals.

c. Having cars serviced by the dealers only, unless otherwise specified.

d. Reporting any defects or accidents.

The school relationship with the dealer must not be overlooked. All problems relating to the car's use should be discussed only between the dealer, instructor and administrator. It is recommended that the dealer be invited to meet and speak to the driver and traffic safety education class and that he be given some recognition for his contribution to the school program.

F. MATERIALS AND EQUIPMENT

Special materials such as films, filmstrips and brochures should be ordered well in advance of the time they are to be used, since advanced planning is essential to effective program operation. The following is a list of items to be considered when planning a driver education program:

1. A state-approved driver education program
2. Certified qualified teachers
3. Textbooks
4. Kansas Driving Handbook
5. Adequate reference materials for student use
6. Provisions for dual-control cars
7. Properly registered automobiles
8. Adequate insurance coverage
9. First Aid kit and fire extinguisher

10. Identification signs and dual-equipment for cars

11. Films and filmstrips on traffic safety

12. Necessary audio visual equipment

13. Psychophysical testing devices

14. Stanchions, road signs, and other equipment for practice driving instruction

15. Records and reports necessary to protect pupils and school personnel in case of liability.

G. PUBLIC RELATIONS

Good public relations is an integral part of the driver education program in the secondary schools. Properly conducted, the driver education program can become a significant force in public relations for the entire school system. Public relations must be intra-public as well as inter-public. Beside the motivation of "good will" between the school and the public, there is the need for motivating "good will" within the school. In this area of competitive and complex living, no institution can long endure without implementing a program of public support. The public relations program for driver education should be concerned with three basic fields of approach. They are: information (education) persuasion and integration.

Information disseminated to the public is a form of education through which the public comes to understand the needs for the program and its objectives. Information is disseminated through contacts, which may be made in several ways. Some of them are:

1. Contacts with individuals, such as group leaders who influence the thoughts and actions of special interest groups, i.e., law enforcement officers on the state and local level, insurance company personnel, auto mechanics and others related to the driver education field.

2. Contacts with small groups by talks before civic, service and business clubs, parent-teacher associations and other organizations. Driver education teachers should take advantage of every opportunity to speak before each of the above groups. This method of communication is vital in informing the community concerning the progress and activities of the driver and safety education program.

3. Contacts with the masses by talks and programs conducted on radio and television and articles in newspapers and magazines offers driver education teachers an excellent opportunity for rendering a public service in the field of driver and safety education.

4. Contacts with parents by letters explaining the objectives of the program, its value, and the progress of students. Assembly programs, open house for parents, and special program visitations are all conducive to good public relations.

An approach to the public relations program concerns the effort to integrate attitudes and actions of the program with the public and the public with the program. The integration approach concerns adapting the program to environment so that it will meet with favorable public opinion. Some important suggestions concerning this phase are:

1. The school board should develop policies governing the use of the practice-driving vehicle. Indiscreet use of the vehicle for other than driver education jeopardizes the reimbursement to the school district.

2. The personal behavior of instructors in both actions and language during practice-driving periods should be such that it will not draw criticism. It should be a rule to have **at least two students** in the car at all times during practice driving and never more than one student and instructor in the front seat.

3. The driver education instructor, as well as all members of the school faculty, should drive in an exemplary manner at all times. Careless driving, show-off tactics and traffic violations by the instructor can arouse tremendous public resistance to the program which, in turn, affects the entire school system.

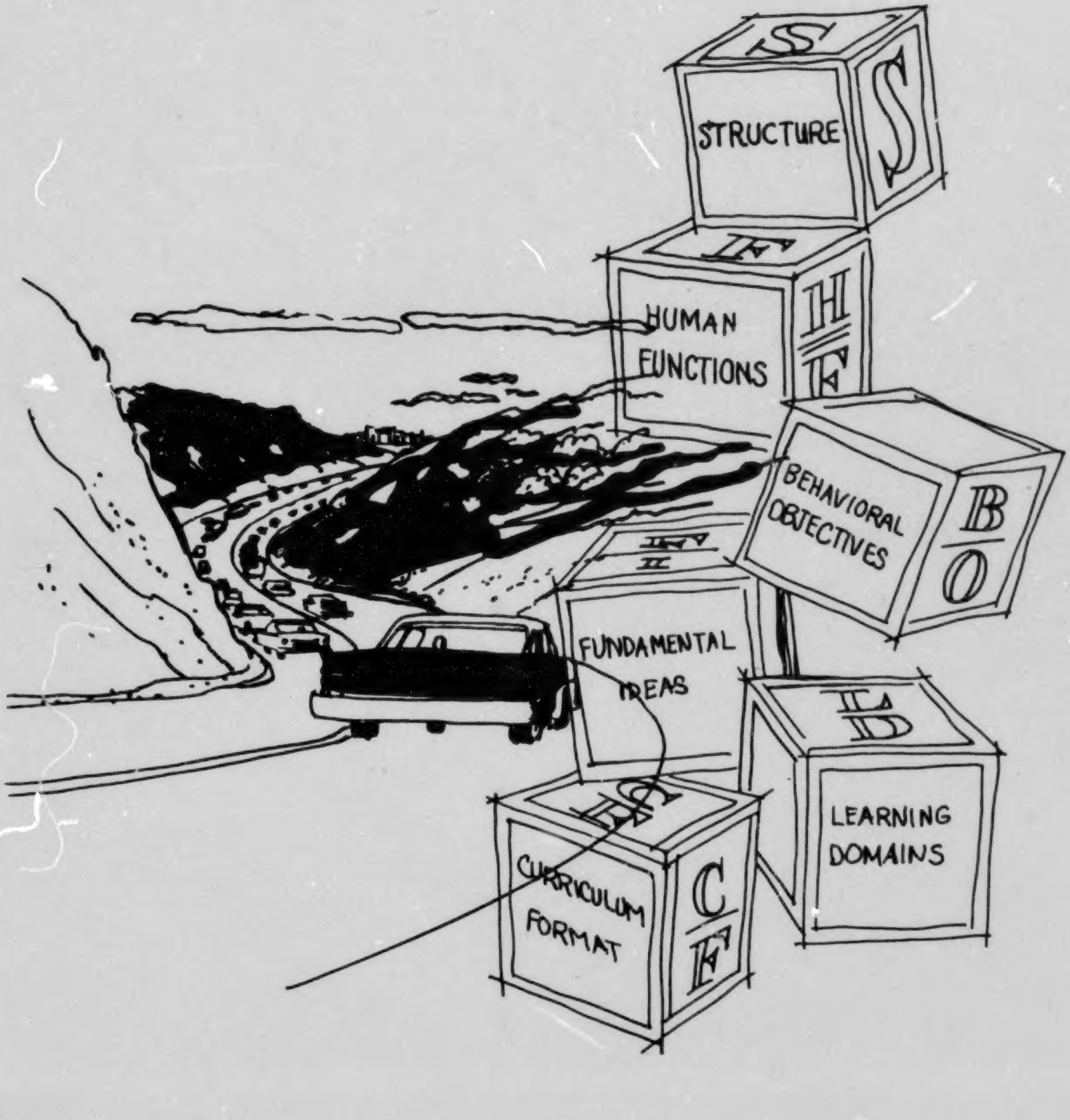
Special recognition and appreciation should be expressed to the automobile dealer who furnishes the practice-driving cars. Some suggestions are:

1. Field trips to dealer who furnishes automobile(s).

2. Letters to dealer thanking him for use of automobile(s).

3. Newspaper publicity concerning the donation of automobile(s).

4. Dinner meeting at which appropriate recognition is given to the dealer.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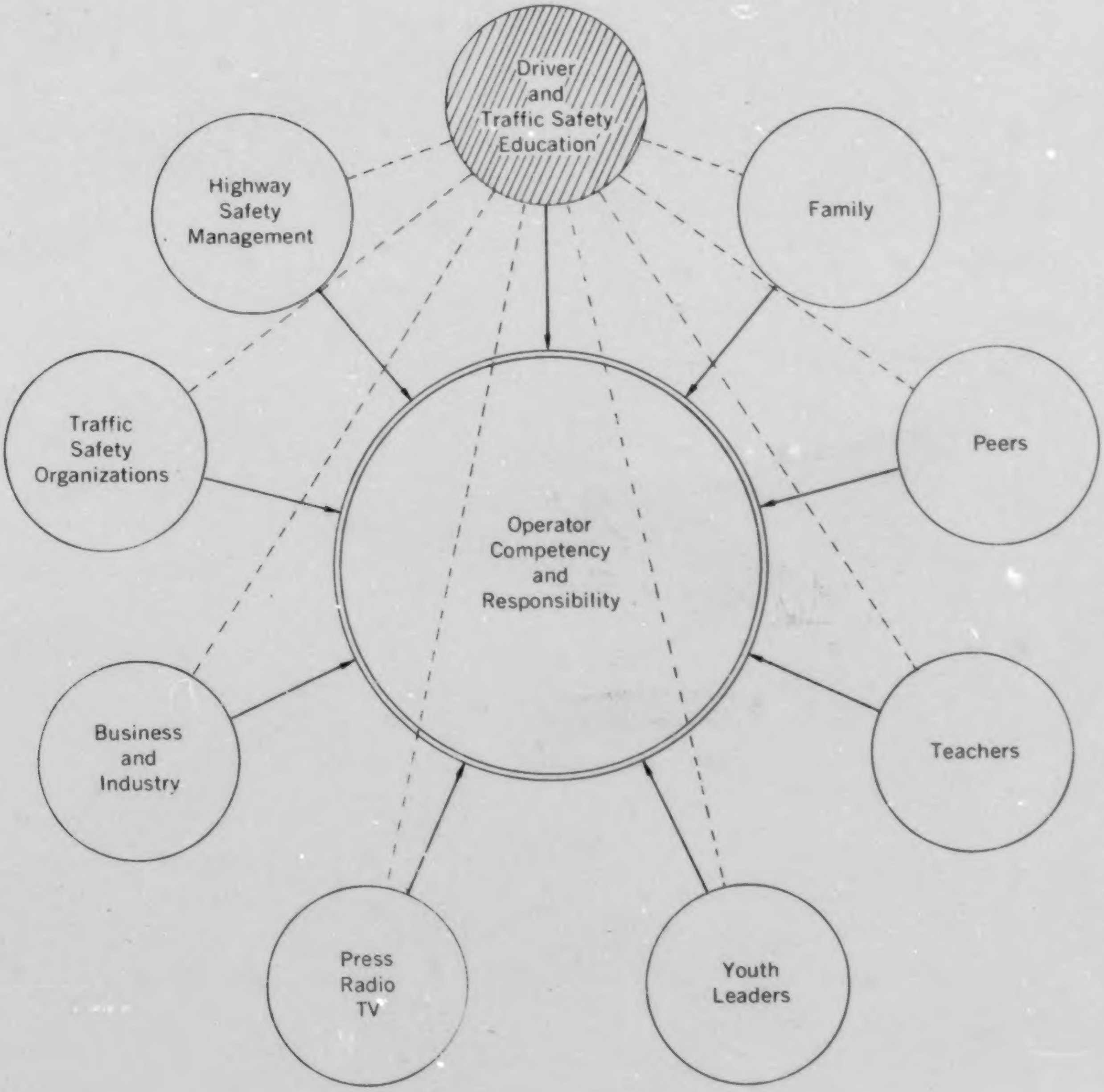
FORCES SHAPING OPERATOR COMPETENCY AND RESPONSIBILITY

Figure 1


Driver and Traffic Safety Education
Highway Safety Management
Family
Traffic Safety Organizations
Peers
Operator Competency and Responsibility
Business and Industry
Teachers
Press Radio TV
Youth Leaders

(Driver and Traffic Safety Education
Can Influence These Forces)

Part 2. Curriculum

A. STRUCTURE

Tasks that individuals perform relative to driving and traffic safety serve as natural focal points around which to structure the curriculum. In this guide, objectives and content items were derived from and grouped around what people do, on and off the highway, in relating to the system. This process served to reduce personal bias in selecting objectives and content. Behavioral objectives were included when they contribute to a decision or performance involved in one of the tasks. In some cases the judgments were difficult and somewhat subjective because of insufficient evidence about the task.

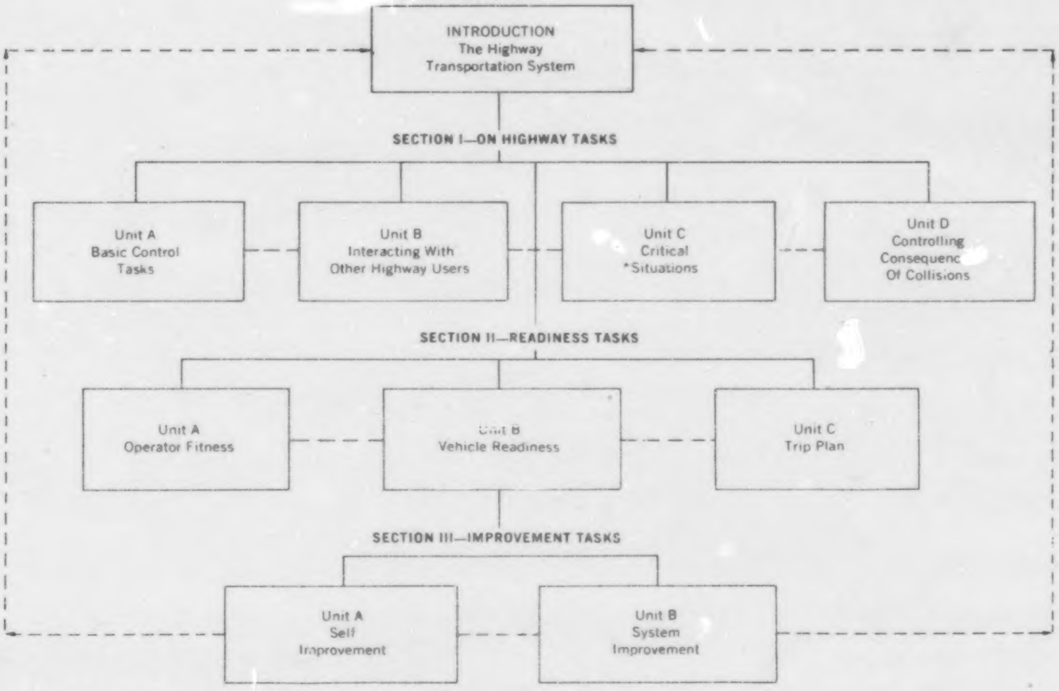
B. HUMAN FUNCTIONS— BASIC POINTS OF CONTACT AND CONNECTION FOR THE CURRICULUM

Performance depends upon the efficiency and effectiveness of human functions applied to the task, so educational efforts should be directed toward developing the quality of these functions. Although researchers have classified these functions somewhat differently, their analyses appear to agree in substance. The terms in the study follow closely those proposed by other researchers.

1. **identify** the relevant cues;
2. **predict** their significance;
3. **decide** what to do; and
4. **execute** your decision.

The precise division and labels are not important so long as they come from a systematic and logical analysis, and are meaningful to the teacher and his students. Some may prefer

DRIVER AND TRAFFIC SAFETY EDUCATION
CURRICULUM STRUCTURE
Figure 2


INTRODUCTION
The Highway
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SECTION I—ON HIGHWAY TASKS
Unit A
Basic Control
Tasks
Unit B
Interacting With
Other Highway Users
Unit C
Critical
Situations
Unit D
Controlling
Consequences
Of Collisions
SECTION II—READINESS TASKS
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Operator Fitness
Unit B
Vehicle Readiness
Unit C
Trip Plan
SECTION III—IMPROVEMENT TASKS
Unit A
Self
Improvement
Unit B
System
Improvement

to use "perception" instead of "identify"; and "judge," "evaluate," or "assess" instead of "predict." In any case the person senses and processes information, decides and acts.

C. BEHAVIORAL OBJECTIVES

This project has been influenced by those who emphasize that objectives should be written in terms of measurable learner performance. Behavioral or performance objectives include a verb denoting observable action such as identify, write, classify, predict, summarize or compare. These terms are less subject to misinterpretation than verbs like know, understand, appreciate and other vague terms, and thus tend to commumicate more reliably. In the statement of objectives is a description of the stimulus being responded to, and an indication of the desired adequacy of the action.

Although all of the objectives will be labeled "behavioral objectives," a close look will reveal that two distinct kinds of behavior are represented. On one hand the behavior is immediate and close to that required in real world performances. For example, in the laboratory phase of the course, we are able to teach and measure the degree to which students have learned to control the vehicle, interact with other highway users, and handle complex and a few critical situations. Another group of objectives represent only proxy measures of real world performances. These could be termed "behavioral potentials" or "enabling objectives," because here studenst acquire knowledge, intellectual skills, and attitudes enabling them to handle real world situations, should they arise. To illustrate, testing of a student's ability to handle a skidding vehicle would be too hazardous with facilities available to most schools, but we can test his understanding of the factors involved in the prevention and correction of skids, hoping that this cognitive learning will make a difference in actual driving performance. Also included in this category of objectives are behavior potentials designed to prepare students to make intelligent choices in non-driving, traffic related situations. We cannot be certain how a student will respond one, three or five years later when he is faced with a situation involving drinking and driving, vehicle maintenance, trip planning, handling of an accident scene, or support for a traffic engineer. However, through problem solving, simulation and other methods, we can help students to acquire correct information and to develop a process for making rational decisions. How well students acquire these behavioral potentials can be measured, and in that sense they are also immediate behavioral objectives. Therefore, no distinctions are made in this guide.

A feeling prevails that not all of the learning goals in Driver and Traffic Safety Education can be observed and measured at the end of the course. First of all, some meaningful learning may be unobservable or internal and, therefore, cannot be reduced to performance acts. This is particularly true in the affective domain of beliefs, attitudes and values where appraisal techniques are woefully inadequate. Does this mean that we should not try to develop traits that appear to be beyond objective measurement? The thinking here is that we must turn toward teaching and evaluating all of the traits that research indicates are important in driving, regardless of how difficult they are to measure. We may find that if affective objectives can be defined more precisely than they are at the present, significant changes can be made in the attitudes and values of students.

D. CURRICULUM FORMAT

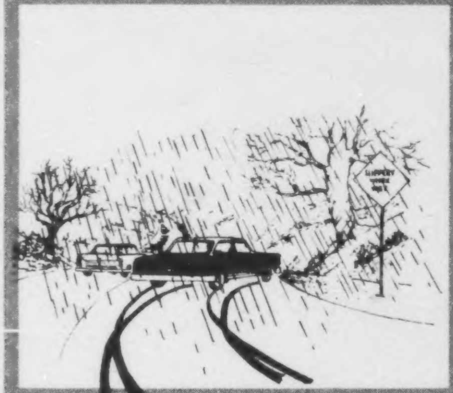
The curriculum format includes "Sections," "Units," "Episodes" and "Segments." Each episode includes a page **Episode Delineation Form** consisting of concepts, behavioral objectives and learning activities. A "concept" represents the fundamental idea in the segment, the "objective" suggests student behavior revealing extent of learning, and learning activities present ideas for developing the desired behavior.

Some of the behavioral objectives can be used as test questions as stated, but most of them serve only as the basis for developing questions, learning activities and media.

Learning activities are included for only some of the episodes. The project writer felt that a greater contribution could be made by concentrating on overall curriculum structure, behavioral objectives and content. As curriculum planners and teachers in driver and traffic safety education, we need to approach a consensus on behavioral objectives and content.

UNIT A

UNIT B



UNIT C

UNIT D

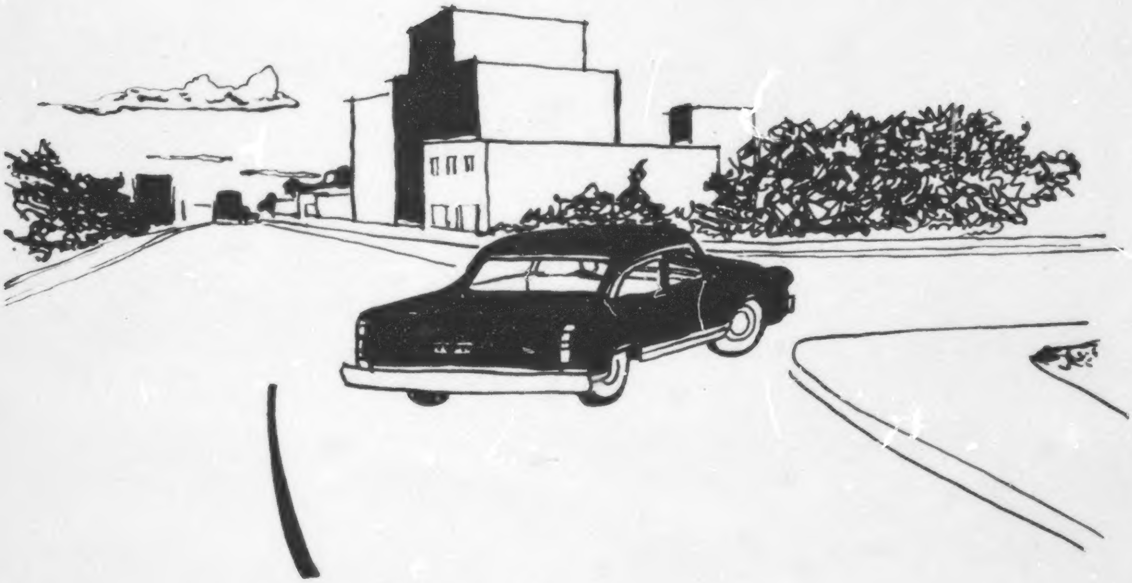
SECTION 1. ON HIGHWAY TASKS

SECTION GOAL:

Students will be able to perform motor vehicle operational tasks under varying road and traffic conditions with at least entry-level proficiency and, more important, the potential to become expert. In addition, they will be prepared to handle themselves appropriately at a traffic accident scene.

UNIT TITLES:

A. Basic Control Tasks
B. Interacting With Other Highway Users
C. Critical Situations
D. Controlling The Consequences Of High Collisions



SECTION 1. ON HIGHWAY TASKS

Unit A. Basic Control Tasks

UNIT OBJECTIVE:

Students will be able to control the vehicle and perform basic maneuvers to the point where they can enter light traffic under teacher supervision.

EPISODE TITLES:

1. *Man and the System*
2. *Vehicle and Road Surface Interaction: Basic Concepts*
3. *Directional Control*
4. *Speed Control*
5. *Braking and Stopping*
6. *Maneuvers*

UNIT A. BASIC CONTROL TASKS
Episode 1. Man and the System

Seg	Concepts	Objectives--Student Behavior Students will be able to:	Learning Activities & Resources
1.1	System	Identify the characteristics of a "system".	Teacher-led presentation revealing the definition, characteristics, and example of "system". Each student identifies a system that he is familiar with and describes why it fits the definition of a system.
1.2	Highway Transportation System	Describe the major components of the highway transportation system and compare their characteristics with similar components in rail, water and air transportation systems.	Students list the variations in vehicles, highways, and drivers that characterize the highway transportation systems.
1.3	Highway Safety Management	Classify the "forces" which are designed to manage the highway transportation system, and describe the function of each.	By appropriate questioning, the teacher will draw out "forces" from the students. Teachers will fill in those that students do not reveal. Visuals would facilitate the learning of the material.
1.4	System Performance Criteria	Identify the criteria that can be used to evaluate the overall performance of the highway transportation system.	Teacher elicits answers from students through a questioning process and fills in information as needed.
1.5	Driving Task	Summarize the nature of the driving task; purpose, major performance requirements, and the rule of safety.	Questions: What is the major purpose of operating a motor vehicle? What are the major obstacles to accomplishing the mission? What is the underlying reason for driving in a safe manner?

1.1 A system is an orderly arrangement of components and sub-systems that serve to perform some task in a given environment.

a. Vast majority of systems are composed of men and machines.

b. Man needs to be challenged, but not overburdened.

c. In any man-machine system some tasks are better performed by men and other tasks are better handled by machines.

d. System effectiveness is the ability of the system to do the job it was intended to do.

1.2 The highway transportation system, a sub-system of the national transportation system, is composed of many man-machine-environment combinations interacting in a loosely coordinated fashion.

a. Millions of machines varying sizes, design, function, performance capability, age and condition are included.

b. Millions of miles of roadway, and other physical entities on the roadway and the roadside, which affect the movement of the vehicle, vary in design, construction, and condition. (Many highways are inadequate.)

c. The machines are operated on the roadways by millions of operators of varying ages, skills, knowledge, temperament, physical attributes and goals.

d. Because of the demands driving places on the operator, and the serious consequences which can result from poor performance, driving is one of the most hazardous activities people engage in.

1.3 Developing and managing the highway transportation system requires many interconnecting forces working together at the federal, state and local levels.

a. Highway, traffic and vehicle engineers strive to provide safety on the highways, operational controls and vehicles that will enable people to reach their destination safely, conveniently and economically.

b. Laws and ordinances supply standards for motorist and pedestrian conduct.

c. A driver licensing program helps to limit vehicle operation to persons physically and mentally qualified.

d. Motor vehicle registration procedures furnish rapid identification of vehicle ownership.

e. Police traffic supervision is designed to ensure safe and efficient movement of traffic on streets by:
(1) directing and controlling traffic;
(2) enforcing traffic laws; and
(3) investigating accidents.

f. Traffic Courts determine guilt or innocence and impose penalties in accordance with law.

g. Driver and Traffic Safety Education is designed to improve the competency of highway users.

h. A good traffic records system is the base of all aspects of a coordinated traffic safety and vehicle usage program.

i. An effective program of emergency medical care and transportation for those injured in traffic accidents.

j. Organized citizen support groups, cooperating with public officials, are essential for an optimum highway transportation system.

1.4 The overall performance of the highway transportation system can be assessed in terms of:

a. the number of people and the amount of goods which can be moved;

b. the geographical locations between which movement can occur on roadways;

c. the time it takes to complete movement between various locations;

d. collisions which prematurely terminate or interrupt movement; and

e. cost factors.

1.5 The task of driving a motor vehicle occurs within the context of the functioning highway transportation system.

a. Individual drivers strive to move their vehicles from one location to another as safely, economically, conveniently and comfortably as possible.

b. The individual's goal is reached by selecting paths and velocities coordinated with the paths and velocities of other drivers and pedestrians. In this sense driving is a social activity.

c. The operator's task (perceptual-motor) is essentially the same regardless of the vehicle he is driving. He must:
(1) scan and search to **identify** key cues in the environment;
(2) interpret the cues and **predict** what implications they have for his behavior;

(3) **decide** upon an appropriate course of action; and
(4) **execute** the decision through a complex coordination of hands, feet, senses and mind.

d. The major performance requirements in the driving task are placed on the operator by the environment, which is constantly changing due to variations in the:
(1) roadway surface and design;
(2) near-path physical structures;
(3) traffic density and movement patterns;
(4) traffic signs and signals;
(5) pathway visibility; and
(6) weather.

e. Safety must weigh heavily in the decision-making process if the task is to be accomplished successfully. (Safety is a means to an end.)

Episode 2. Vehicle and Road Surface Interaction: Basic Concepts

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Friction	Classify the (a) general conditions that determine the amount of friction between two surfaces.	
2.2	Traction	Describe the role of traction in maintaining vehicle control	
2.3	Road Surface Factors	When shown pictures of roadways, identify and appraise conditions that influence the gripping efficiency of the roadway.	

2.1 Friction is the resistance to motion between two surfaces.

a. Amount of friction between two surfaces depends upon the:
(1) substance of the material—metal, wood, rubber (the softer the material, the more friction);
(2) roughness of the surfaces (the rougher the surface, the more friction);
(3) amount of force pushing the surfaces together (the more force, the more friction); and
(4) presence of "lubricants—oil, water, leaves, etc.—which tend to hold the surfaces apart thereby reducing friction.

b. Amount of friction between two surfaces (coefficient of friction) is calculated by dividing the amount of force necessary to pull one surface over another by the amount of force pressing the two surfaces together (weight). Coefficient of friction equals force over weight.

2.2 Traction (adhesive friction) is essential to vehicle control.

a. Traction is needed on the drive wheels to make the vehicle go, on the front and rear wheels for directional control and braking.

b. It takes more force to start a vehicle moving than it does to maintain movement.

c. Although traction is increased by the weight of a vehicle, a heavier vehicle will not stop in a shorter distance, because the added traction is balanced by the added inertia of that weight.

2.3 Many factors affect the gripping efficiency of road surfaces.

a. Surface materials (concrete, asphalt, gravel and dirt) have different coefficients of friction.

b. Dry surfaces have a much greater gripping efficiency than when wet.

c. At the beginning of rain, particularly after a dry spell, the water combines with oil and dirt of the surface to form an emulsion that is extremely slippery.

d. Loose sand and gravel, stone chips, mud, wet leaves, oil and grease tend to lower gripping efficiency also.

e. Ice and snow provide very little frictional grip.

f. Ice patches under an overpass, around shaded curves and other spots blocked from the sun provide a deceptive hazard because they thaw more slowly.

g. As temperature rises within the freezing range, ice and to a less degree snow, becomes much more slippery (braking distance doubles with a temperature rise from 0 to 32° fahrenheit).

h. Bridges freeze before other road surfaces, and also thaw first.

i. Bumpy washboard roads reduce the friction grip of tires on the road.

2.4 Tires are an integral part of the braking system, the steering system, and the drive train.

a. Tire treads provide traction on wet surfaces by furnishing an outlet for water squeezed by the tire groovings as they cut into the film of water.

b. The groovings of tire treads also provide ventilation to combat heat buildup caused by friction of flexing treads.

c. Variance in tire tread depth and inflation pressure can create steering difficulties, instability and uneven braking.

d. Letting air out of tires does not increase traction; in fact, it may even increase the tendency to skid on turns.

e. Either overinflation or underinflation of tires causes excessive wear.
(1) Underinflated tires cup in the center causing shoulder wear.
(2) Underinflated tires overheat which reduces the strength and durability of the tires.
(3) Wear confined to the center of the tire indicates that the tire has been overinflated.
(4) Overinflated tires are easily damaged because the cords cannot flex and absorb road shock.

f. Snow tires (including studded tires) improve traction and stopping distance on ice and snow, but tire chains are more effective under those conditions.

Episode 3. The Directional Control

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Line of Sight	Explain why seating position, line of sight and manipulation of the steering control all influence the operator's ability to maintain directional control.	
3.2	Steering and Suspension System	Identify the symptoms and possible consequences on directional control of (a) front end misalignment, (b) defective steering mechanism, and (c) weak shock absorbers.	
3.3	Weight, Speed and Vehicle Profile	Relate weight, speed and vehicle profile to directional control.	

3.1 Centering the line of sight on the path the car should travel, and steering toward the center of this selected path, will help to prevent over-steering and under-steering. (Aim high in steering).

a. Good seeing begins with good seating.
(1) Sit erect and squarely behind the wheel with eye level well above the top of the steering wheel.
(2) To look backward is physically awkward, but it is the only way to get the whole picture when backing the vehicle.

b. Constant eye movement helps to prevent both the fixed and the blank stare.
(1) Center on the path ahead.
(2) Scan the scene continuously.
(3) Check mirrors and dash periodically.
(4) As speed increases, search farther ahead for environmental cues.

c. Even on a straight road a car will not "hold the path" unless the driver is making early steering corrections for each deviation.

d. Position of the hands on the steering wheel may vary with the design of the seat, the length of the driver's arms, muscular differences, and speed of travel. **In any case the hand position should be where the driver can steer best.**

3.2 Properly functioning and precise steering and suspension systems allow changes in direction to be made accurately.

a. The steering system and front tires utilize friction to provide maneuverability.
(1) A properly functioning steering system is particularly important in fighting cross winds, negotiating sharp curves, and during evasive actions in emergencies.
(2) Power steering helps the driver to retain control under adverse circumstances (blowout, chuck holes, soft shoulder, etc.).

b. Shock absorbers lend firm control over spring action and in so doing help to provide directional stability.
(1) Shock absorbers make it possible for tires to maintain a nearly continuous, firm contact with the road surface, to produce a smooth and comfortable ride.
(2) Shock absorbers have limited life and lose effectiveness gradually.

3.3 Weight, speed and vehicle profile influence directional control.

a. The effects of side wind forces increase as the weight of the car decreases.

b. Trailers, campers and vehicles with a cartop carrier are especially susceptible to wind forces.

c. As car speed increases, the angle decreases at which direction changes can be made safely.

Episode 4. Speed Control

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
4.1	Kinetic Energy	Apply the concept of kinetic energy to vehicle movement.	
4.2	Acceleration	Define "deceleration" and state the factors that determine the acceleration capability of vehicles.	
4.3	Deceleration	Define "deceleration" and describe non-breaking techniques for safely and efficiently decelerating a moving vehicle.	
4.4	Cornering	Identify vehicle and environmental factors that determine speed selection on curves.	
4.5	Speed Laws	Classify the various kinds of speed limits.	

4.1 A moving automobile, just as any other body in motion, possesses what is known as kinetic energy produced by its mass (weight) and its velocity.

a. The potential energy stored in gasoline is changed to kinetic energy by the car's engine.

b. Kinetic energy (momentum) keeps the car rolling when the foot is removed from the accelerator and there is no help from the engine.

c. Kinetic energy increases in a geometric progression (as the square of the speed).

d. To stop a moving vehicle, kinetic energy, which cannot be destroyed, must be converted in form to heat by rolling to a stop, braking to a stop, or colliding with an obstacle.

4.2 Acceleration, the vehicle's capability to increase from a given speed or stationary position to a higher speed depends upon a variety of factors.

a. Engine power and gear ratio are dominant variables in determining acceleration capability.

b. Other factors influencing acceleration are:
(1) traction of the drive wheels;
(2) driver selection of proper gear ratio; and
(3) the driver's use of the accelerator pedal and related feedback.

4.3 Deceleration, a decrease in the rate of speed of the vehicle, can take place through means other than braking.

a. When the pressure on the accelerator pedal is decreased, the car slows due to a retarding force of the engine compression, air resistance, and frictional forces.

b. Downshifting (selecting a lower gear ratio in a manual transmission car), in combination with less pressure on the accelerator, produces a sufficient retarding force for control in some situations.

4.4 The tendency of a moving body to continue at the same speed and in the same direction (inertia) unless another force is applied confronts the vehicle operator as he strives to maintain directional control during turning movements.

a. In a curve, friction and the force of gravity combine to help keep your car from skidding off the roadway.

b. "Centrifugal" effect, a term of convenience to describe the effect of inertia when a car rounds a curve, varies at a geometric ratio—the square of the speed.
(1) Car speed is the most important variable in controlling a vehicle on a curve.
(2) As the radius of the turn is reduced, the centrifugal effect is increased.
(3) Centrifugal effect increases directly with the weight of the vehicle; however, an increase in the coefficient of friction due to the added weight helps to balance this negative factor.

4.5 Vehicle codes include more than one kind of speed limit.

a. Absolute speed limits, both maximum and minimum, serve as a guide to the driver in selecting appropriate speeds for varying conditions.
(1) Persons drive in a variety of environments for the first time and, therefore, need some advice in respect to the selection of a reasonable speed.
(2) A maximum speed limit does not give the operator permission to go that fast, it merely suggests the speed at which he may travel under ideal conditions.

b. In addition to absolute speed limits, drivers at all times operate under a basic speed law.
(1) This regulation compels the driver to use good judgment in scaling down the absolute speed limit to fit the conditions prevailing at a given time and place (reasonable and prudent speed).

Episode 5. Braking and Stopping

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
5.1	Stoping	Describe the various ways that kinetic energy can be dissipated to stop a moving vehicle.	
5.2	Normal Braking	Indicate the factors that determine braking efficiency in a normal slowdown and stop.	
5.3	Locked Wheel Stop	Contrast locked wheel braking versus normal braking with respect to men-machine-road-ways factors.	
5.4	Braking Distance	Given certain speeds and coefficients of friction, predict the effect of these variables on braking distance.	
5.5	Stoping Distance	Given certain speeds and times needed for identifying, predicting, deciding and executing, estimate the total stoping distances. (The purpose here is to implant the idea that the distance is greater than would be expected).	
5.6	Braking Techniques	Relate principles underlying the braking operation to braking techniques.	

5.1 In order to stop a moving vehicle (a body in motion tends to remain in motion), friction must convert kinetic energy into heat.

a. On a level road with foot off the accelerator the car will eventually roll to a stop without braking because of friction between tires and road surface, the friction of the moving parts, air resistance and the engine compression. Then car will stop in a shorter distance going uphill.

b. In a normal braking stop it is the frictional drag of the brake lining against the brake drums that slows the revolving wheels, and the tires transmit the braking force to the road surface.

5.2 Braking efficiency in influenced by a number of factors.

a. The front wheels are required to do more work than the rear wheels because of weight transfer.

b. Power brakes assist the driver in applying brake pressure but do not affect the amount of friction or braking force generated.

c. The coefficient of friction between the tires and the road surface governs the maximum braking force usable. The most powerful brakes are useless without traction.

d. Maximum braking force is obtained just before the wheels lock.

e. Double the speed, and braking distances increases four times; triple the speed, and braking distances increases nine times.

5.3 When brakes are applied too firmly or too suddenly the friction between the brake lining and the brake drum is so much greater than the friction between the tires and the road surface that the wheels stop or lock before the vehicle stops.

a. If the wheels lock, the friction between the tires and the road is the major determinant of the length of the stops.

b. When the wheels are locked equally the vehicle will usually slide straight ahead.

c. When the rear wheels lock while the front wheels run freely, the vehicle will be prone to turn completely around, if speed is sufficient.

d. Locked wheel braking in effect takes away your steering control.

e. Weight of the vehicle does not change braking distance significantly in a **locked wheel stop**.

5.4 Since kinetic energy, which must be changed to heat by braking, varies in a geometric progression, so does braking distance. (Double the speed, and braking distance increases four times; triple the speed, and braking distance increases nine times.)

a. When speed remains constant, braking distance varies inversely with the coefficient of friction between the tires and the road surface. (When the coefficient of friction is reduced by ½, braking distance is doubled.)

b. Weight of the vehicle does not change braking distance significantly in a locked wheel stop.

5.5 Total stopping distance equals the distance a vehicle travels during the time needed by the operator for identification, prediction, decision and execution, plus the time required for the brakes to stop the vehicle after the brake control has been activated.

a. Feet per second serve as a basis for determining distance traveled in a given time. To convert miles per hour to feet per second multiply the miles per hour by 1.47.

b. Distance traveled in feet per second during these functions varies directly with the time. Distance equals time multipled by velocity.

c. Execution time varies between individuals due to muscular coordination and skill, and it also varies for the same individual at different times (fatigue, alcohol, drugs, etc.).

5.6 Proper techniques in braking can provide smooth stops, prevent accidents, and also add miles to the life of the brakes.

a. Braking technique becomes more critical as vehicle speed increases.

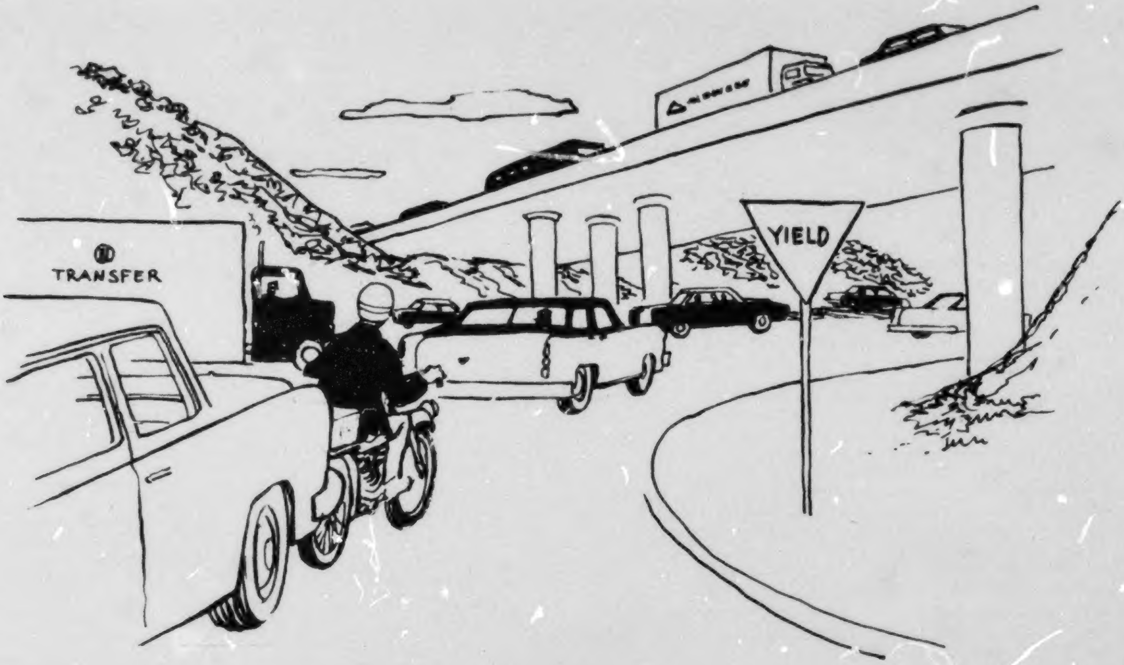
b. Releasing the brake pedal slightly just prior to stopping point, permits the vehicle to level and prevents a "snap-back" effect.

c. When compelled to stop quickly, particularly on a wet or icy surface, intermittant application of the brake pedal (pumping action) will minimize the danger of skidding, and steering control will be maintained.

d. When continuous braking is required for a period of time, such as one long steep downgrade, shifting to a lower gear before starting downwards will provide engine braking power, and help to prevent brake fadeout.
(1) However, some automatic transmissions will not downshift above a certain speed.
(2) Light, smooth braking on a long downgrade is often preferred to "pumping," since the up phase in pumping permits the vehicle to accelerate.

Episode 6. Maneuvers

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
6.1	Controls, Gauges and Equipment	5.1-5.9 Students will be able to (1) verbalize the proper sequence of steps and related rationale for performing these maneuvers and (2) execute the maneuvers to the point where they are able to apply them in light traffic. (Refer to Part III for sequencial steps).	Textbook material, transparencies, films & other aids will help students acquire an understanding of the how and why of each maneuver. (cognitive learning). This step will reduce the time needed in the lab phase for developing performance proficiency.
6.2	Pre-starting and Starting Procedures	Further proficiency and confidence will be obtained as they practice the maneuvers under "real-world" traffic conditions (Unit B). Refer to Part III for a sequential step order to given maneuvers.	Lab methods appear to have distinctive strengths related to developing proficiency in performing maneuvers. **Simulators**—A good method for learning the sequence of steps: Can help also in the "identify", "predict" and "decide" functions as they relate to the maneuver.
6.3	Starting, Moving, Stopping & Security		
6.4	Left and Right Turns		**Multiple-Car**—Efficient and effective method for learning the motor skills and distance judgment required for executing the maneuvers.
6.5	Backing		
6.6	Turning the Car Around		**Traditional In-Car Method**—Brings together all the capabilities needed to perform the maneuvers-understanding, motor skills, perceptual and predictive capability.
6.7	Lane Changing and Passing		
6.8	Parking-Angle, Perpendicular & Parallel		
6.9	Up-down Hill Starting, Stoping and Parking		



SECTION 1. ON HIGHWAY TASKS

Unit B. Interacting With Other Highway Users

UNIT OBJECTIVE:

Students will be able to demonstrate a level of proficiency in the human functions (identification, prediction, decision and execution) sufficient to perform legally and safely as they interact with other highway users in routine and difficult system environments.

EPISODE TITLES:

1. *Human Functions and Motor Vehicle Operation*
2. *Impediments to Vision*
3. *Distractions*
4. *Movement Within Traffic Flow*
5. *Intersections*
6. *Pedestrians and Animals*
7. *Motorcycles*

UNIT B. INTERACTING WITH OTHER HIGHWAY USERS

Episode 1. Human Functions and Motor Vehicle Operation

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Identify	Write a description of the human functions involved in operating a motor vehicle. Include essential elements in a correct and related sequence.	To initiate this episode the teacher asks "What abilities other than motor skills are needed to drive?" Through responses to this and follow-up questions the class begins to form a picture of the functions needed to operate a motor vehicle. The teacher then fills in with whatever detail he feels is appropriate at this stage, using printed materials and visuals to facilitate meaningful learning.
1.2	Predict		
1.3	Decide		
1.4	Execute		If large cards with the functions printed on them are placed permanently in the classroom for all to see, they will serve as a frame for each lesson.

1.1 One of the basic operator functions in the driving task is to acquire and maintain a clear, complete and accurate picture of the traffic scene in order to **identify** any critical objects or changes which may require compensatory actions.

a. Vision is the primary medium through which the operator acquires environmental and vehicular information.
(1) Visual observations are limited by the physical abilities of the eyes to see clearly (acuity), judge depth and distance, distinguish colors, see in low illumination and adapt to glare.

(2) Central vision consists of a relatively small angle and focuses on only one thing at a time, but fringe vision, which is much wider, enables the driver to observe important cues in the upper, lower and side range of vision.

(3) The eyes can focus on only one thing at a time, but can move very rapidly between several stimuli.

b. For optimum information acquisition, the operator needs to use a consistent, systematic and aggressive search pattern.
(1) The search pattern should continuously scan roadway location and characteristics, location, movement and movement potential of other highway users; traffic control signs and signals; near roadway fixed objects; and the vehicle's instrument panel.

(2) Although an effective search pattern encompasses the total traffic scene (front, back and sides), it concentrates on the various sectors in proportion to the likelihood of hazards.

(3) A scanning pattern employing the "brief glance" technique enables operators to maintain continuous awareness of their relationship to conditions ahead, and, at the same time, acquire a picture of conditions elsewhere that could affect his decisions.

(4) In addition to looking for environmental cues, the driver needs to monitor the location, movement and functioning of his own vehicle in the environment.

c. The operator's ability to maintain a search pattern which detects important cues, without distortions or illusions, is influenced by
(1) The position, intensity, color, contrast and movement of the stimuli;

(2) the condition of his sensory equipment, particularly the visual apparatus; and

(3) distractions outside the vehicle, inside the vehicle and within the person.

d. Besides visually acquired information, the operator senses important cues through auditory, tactile, kinesthetic and other sensory mechanisms.
(1) The operator should have a sense of what the car is doing (road feel) through every physical contact—the seat, floor, brakes and steering wheel.

(2) Auditory cues can help the operator to evaluate his vehicle's performance, and also to sense adjustments needed in relating to other highway users and the environment.

e. From our eyes or other sensory equipment the messages go to the brain, where they are translated into meaningful information through a sorting and analyzing process commonly referred to as perception.
(1) Because of physical and psychological factors the brain does not attend to most things we see, but instead selects only those incoming sensations it wants to consider.

(2) Which stimuli are selected and identified depends upon (a) the degree of threat, (b) previous experience and learning, and (c) motives and emotions in play at the time.

(3) As the number of elements (cues) to be identified increases, the chance of missing an important cue increases. Each element tends to distract the operator from any other element.

(4) Sometimes relevant information will be ignored because of an information overload, while on the other hand, an information underload tends to cause the operator to disassociate himself from the task (limited access highways).

f. Operators predict, decide and act, not according to what things are really like, but according to their perception of what they are like.
(1) Our eyes and brain do not merely register some objective portrait of objects, events and people, but the act of seeing is warped by what we want and, in a sense, need to see.

(2) Before sensory impulses reach the reasoning center of the brain (cerebrum), they take on the emotional characteristics of our values, motives and personal needs.

(3) We see what our past experiences and associations have conditioned us to perceive.

1.2 After operators identify the position of important elements (cues) in the traffic scene and their relationship to each other, they must project and **predict** possible future relationships and outcomes, constantly hypothesizing about what will or might be.

a. A crucial and somewhat difficult function for the operator is to judge time-space relationships between his vehicle and other elements in the system, both fixed and moving.
(1) It is especially difficult to judge closing rate and oncoming vehicle speed.

(2) The operator's proficiency in making time-distance judgments on dynamic (moving) elements depends on fixation time as well as experience in making similar judgments.

(3) As the speed of the operator's vehicle or other vehicles around him increases, judgments of time, space and speed become more difficult to make.

b. The traffic situation is predominantly a social situation (must use the highway **with** other users),

therefore, the operator needs to predict the probability of other highway users occupying his path at the same period of time.
(1) Predictions related to other highway users are more subjective and unpredictable than those related to physical elements in the environment.

(2) We know very little about the physical, mental and emotional state of highway users with whom we interact.

(3) Expecting and being prepared for the unexpected on the part of others usually will afford you the time and space to take evasive action.

(4) Deviant action by other operators does not necessarily imply anti-social motivation, they simply may have misperceived the situation.

(5) The validity of predictions and expectations increases in relation to an increase in the accuracy and adequacy of communications occurring between highway users through such means as directional signals, brake and back-up lights, position of vehicle, horn, speed changes, body lean of vehicles and eye-to-eye contact.

(6) In addition to the usual cues related to the other operators' intentions, sometimes the age, number of people, and actions of the drivers or passengers in the other vehicle will reveal some valuable tips as to what we might expect.

(7) Quality of predictions can be increased if the operator considers not only how the situations appear to him, but also takes into consideration how the situations appear to other users around him and what his behavior means for other users.

(8) While a prudent operator will be guided by expectations concerning the behavior of other highway users, he **avoids full commitment** to assumptions about what they will do. He is prepared to adjust in case his prediction is not borne out.

c. In predicting the potential movement of other vehicles, an operator should consider the attributes and capabilities associated with each vehicle.
(1) **Motorcycles** can change directions suddenly; difficult to see and to judge their speed (one should imagine the motorbike is moving faster than it seems to be); unstable compared to four-wheel vehicle; more susceptible to loss of control; operator has excellent forward vision but rear view mirrors may be ineffectual; reaction time of the operator is less since hands and feet are placed on the controls; operator may be less attentive to the driving task since the nature of the vehicle is sporty.

(2) **Trucks and Buses** require more space to manipulate; tend to slow down going up a steep incline, but pick up speed going down-grade; require more time to pass another vehicle going in the same direction; create visibility problems for other operators; drivers usually performing under a time schedule; truck drivers are typically skillful, helpful and courteous.

(3) **Compacts and sport cars** are influenced greatly by winds; difficult to see in "blind spots" and dips in the road; harder for other drivers to judge their speed and distance; turning radius less; design features create a larger blind spot for their operators; deviation from given path may be more abrupt; difficult to predict their acceleration capabilities because of big differences in motor size and compression rates.

(4) **Others**—bicycles; emergency vehicles; entertainment oriented vehicles; farm vehicles; horse drawn vehicles; and snowmobiles.

d. Any traffic situation containing several threatening elements presents a prediction problem for the operator that is greater than the sum of the separate problems posed by the individual elements (synergetic effect).
(1) Seldom are there any loose, isolated elements in the traffic scene, since the changing of one element usually changes the meaning of another. A dog on the shoulder of the road in front of us is mutually related to the oncoming vehicle and the traffic in back of us.

(2) Multiple elements increase the probability that the "worst" will occur. The fact that more possibilities **can** occur increases the chance that something will occur.

(3) Multiple hazards usually create a situation in which solutions conflict with one another (giving an animal on the shoulder a wide berth increases the threat from an oncoming vehicle).

1.3 Formulating a course of action with intent to execute it makes up the **decision-making** function in operating a motor vehicle. Operators make predictions on the basis of their perceptions, and then make decisions on the basis of their predictions.

a. The uncertainty, unpredictability and complexity of the traffic environment generates for the operator many and varied decision problems ranging from minor automatic to highly complex decisions. The simple and routine decisions need to become habitualized, allowing the higher center of brain activity additional time for more difficult or complex decisions.

b. Decision time increases as the number of choices increases, due to the additional burden of sorting and analyzing the sensory data. Difficulty of the decision also increases the time that the driver must have to carry out the decision.

c. Most of the decisions in driving relate to anticipating the threats from the traffic environment and other highway users, and then adjusting to those threats by proper position (allowing a space cushion) and speed.
(1) By decreasing speed and-or increasing the distance from hazards, the operator can buy more time for the eyes to see and the brain to identify, predict and decide upon a wise course of action.

(2) Speed relative to the speed of other vehicles is as important as your own speed in miles per hours. When you are out of tempo with other traffic, too fast or too slow, passing and other situations are created which disturb traffic flow and create hazards.

(3) In situations of limited space-intersections, merging, passing, parking lots—speed control is the only means available to avoid conflict with other highway users.

(4) Since man is a poor detector of relative velocity between himself and other cars (especially at night), he should allow a margin of error through increased distance and reduced speed.

(5) Good positioning of your vehicle provides ample sight distance for efficient tracking and full viewing and, in addition, affords adequate time and space for unhurried decisions and judgment.

d. Because of the compounding effect of multiple elements in the traffic scene (referred to in 1.2-f.), operators will benefit from decisions that reduce the number of elements they must contend with simultaneously.
(1) **Where** operators meet moving vehicles, pedestrians and animals, can be controlled by speed adjustment. (Adjust speed to avoid meeting an oncoming vehicle and any other hazard, for example, an animal along the highway.)

a. As the driving scene changes, the operator tries to compensate for or match these changes by a series of properly timed, semi-automatic, physical responses to the stimuli from the traffic environment. The more you drive the more habitual these responses become.

b. The operator's success in making the vehicle do what he wants it to do depends on the speed and preciseness of his skill in:
(1) manipulating controls for regulation of power and velocity;

(2) manipulating steering wheel for guidance of the vehicle;

(3) manipulation of controls for slowing and stopping; and

(4) manipulation of controls and other actions for communicating and signaling.

c. Learning to manipulate the controls in a prescribed sequence facilitates habit formation and thus helps to assure safe and efficient performance.

d. Motor responses are relatively simple, easily mastered, and relatively invariant, once the operator is familiar with the vehicle and knows the relationship between his control inputs and the vehicle output.

e. Differences in over-all response time (time from identification through execution) are due mostly to the speed and quality of the information processing and decision function rather than differences in simple reaction time.

f. The competent operator rarely has to depend on his reaction time per se (time between decision and execution) to avoid a conflict, because he has already anticipated and compensated for the impending threat.

g. When a stimulus of a dangerous situation is sufficiently violent, operators will break down and allow a reflex or impulsive action to take over or they may "freeze" (information processing function is by-passed).

(1) Usually operators can determine **where** they will execute maneuvers—backing, parking. Avoid these maneuvers in combinations with any dangerous highway or traffic conditions.

(2) Drivers should adjust the heater, light a cigarette, converse with passengers and other non-operational tasks only where the vehicle is under their control, and only when traffic conditions are relatively free of hazardous elements.

(3) Weather, road design and condition, and other factors not under the control of the operator make it especially important that the operator use the means at his disposal to avoid multiple dangers.

(4) Whatever compromise might have to be made in facing multiple hazards, operators should decide upon a course of action that minimizes the **probability** of conflict with another highway user.

h. Speed and quality of decision-making varies from person to person, depending largely on the individual's previous experience and familiarity with the situation that demands the decision. Young drivers can hasten the development of decision-making capabilities by:

(1) improving their information gathering and predictive capability;

(2) learning the principal response alternatives available to drivers;

(3) identifying the mental errors drivers should guard against; and

(4) analyzing driving situations that produce problems.

1.4 The sensory and mental functions (identification, prediction, decision) finally culminate in the performance function as the operator **executes** his decisions related to direction, speed and communication with other highway users. Failure in execution is a failure to do what was intended and is not a mistake in decision.

Episode 2. Impediments to Vision

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Clean Windshield and Windows	Group the impediments to vision caused by dirty or foggy car windows, and describe measures under the driver's control to prevent or compensate for these conditions.	
2.2	View Obstruction	Given a series of traffic situations (slides or diagrams), "spot" the obstruction and select appropriate measures to compensate for the situation.	
2.3	Climatic Conditions	Illustrate the similarity of various climatic conditions and darkness with respect to vision problems.	
2.4	Nighttime Conditions	Classify the visual handicaps imposed by darkness, and describe compensatory measures at the operator's disposal.	

2.1 If drivers fail to maintain clean windshields and car windows, both inside and outside, they limit their ability to identify relevant cues in the traffic scene.

a. A clean windshield is important any time, but critical at night.

(1) With a clean windshield, approaching lights are easier to face. Dirt and road film diffuse approaching headlights.

(2) A bug which is only a speck by day becomes a glaring spot at night.

(3) When the windshield is dirty so are the headlights.

b. Windshield wipers and washers help to maintain good forward visibility.

c. Inside surfaces of windows may fog, winter or summer.

(1) Use defroster rather than cloth or tissue.

(2) Blower air needs to be heated in winter.

d. Visibility to the sides and rear of the vehicle enables the driver to detect cues helpful in selecting a safe path and speed.

2.2 View obstructions are "occupational hazards" in driving, but the unnecessary ones should be eliminated and the others adjusted for by the vehicle operator.

a. Operators can reduce the view obstruction hazard caused by parked and moving vehicles by adjusting their space relationship to the other vehicles.

(1) Trucks are a problem because you cannot see through trucks to identify other traffic.

(2) In rain, trucks throw a spray of water that interferes with vision in a passing maneuver.

b. Operators can reduce the problem of barriers to sight such as a building, a blind corner or a parked car by expecting potential hazards behind the barriers.

c. In addition to interfering with the driver's movements, a passenger sitting in the front middle seat may obscure the driver's vision to the rear through the rear view mirror, or obstruct the driver's check of the blind spot on his right. (Better to sit three in back than three in front.)

d. One of the most practical and least costly measures to improve the operator's visibility is to eliminate signs, bushes, trees, poles and cars parked near intersections.

2.3 Weather conditions may reduce visibility there by adding the limitations of night driving to a daytime situations or compound the normal visibility problems associated with nighttime driving.

a. Rain, particularly at night, can distort vision as the wet surfaces reflect all the lights creating a maze for you to drive through.

b. Aside from helping the oncoming operator to see you, switching your lights on in a heavy rain also helps the driver directly ahead whose back window is rain splattered.

c. Low beam headlights are more effective in fog (rain and snow also) because fog is made up of tiny particles of water that act like mirrors.

d. The face shield used by the two-wheeled vehicle operator will impede vision when wet, and it will fog up in cool weather when the vehicle is not in motion.

e. The sun can be a particular hazard because the eye adapts slowly to changes in light intensity.
(1) When facing the blinding effects of the sun, a driver can improve his vision by (a) keeping the windshield clean, (b) properly positioning the sun visor(s), and (c) wearing sunglasses.
(2) After hours of driving in the bright sunlight, your visual efficiency is reduced at dusk and in darkness.

2.4 Due primarily to reduced visibility, critical phases of the operator's task are more difficult under nighttime driving conditions and the competent operator adjusts for these differences.

a. The flood of detail available to help the operator during the daytime is reduced appreciably at night.
(1) Aside from reducing detail, darkness **conceals** hazards.
(2) It is more difficult to judge the speed and position of another vehicle at night.
(3) Operators must depend largely on their headlights which illuminate only a relatively short and narrow path ahead, and do not bend around corners.
(4) Glare from roadside lighting and the headlights of oncoming vehicles impair visibility.

b. To compensate for the handicaps imposed by darkness:
(1) keep panel lights dim for better vision;
(2) reduce stopping distance by slowing down so that you can stop within the visible distance;
(3) increase sight distance by keeping the headlights clean and properly aimed and the windshielf clean;
(4) avoid looking directly into glaring headlights of oncoming vehicles;
(5) increase your following distance;
(6) do not wear sunglasses or tinted face shields (motorcycle operators) at night; and
(7) keep face shield clean and free of scratches which will increase glare at night.

c. When visibility is reduced by darkness or weather conditions, other operators are similarly hampered.
(1) Clear and timely signalling of your intention to slow, stop or turn is more important than ever at night.
(2) Use low-beam headlights when an oncoming vehicle is approaching, regardless of what the other driver does. A quick flash of high beam may be used to indicate a pass.
(3) If for some reason you must stop along the highway, pull well off the traveled portion and actuate a 4-way flasher.

Episode 3. Distractions

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Environmental Distractions	Classify potential distracting environmental factors, predict the possible consequences, and formulate compensatory measures.	
3.2	Within Vehicle Distractions	Classify potentially distracting within vehicle (non-passenger) distractions, and suggest personal means for reducing or eliminating the hazard created by these conditions.	
3.3	Passengers	Describe the ways in which a passenger can be either an asset or a liability to the operator.	

3.1 Environmental and vehicular factors can encourage the operator to disassociate himself (mentally) from the driving task.

a. Although modern highways and vehicles have the very nature to lull you into an inattentive state of mind.

b. Frequently where the need for attention by the operator is most urgent, the distractions outside the vehicle are the most human. In cities particularly, the operator must disregard a barrage of distractions, many deliberately designed to attract attention.

c. The danger of inattention in driving can be minimized by:
(1) realizing when and where gaps in attention and distractions are most likely to occur.
(2) developing good operational habits to "carry" us through the lapses.

3.2 Certain physical actions by the driver, some unrelated to the actual driving task, must either be avoided or accomplished without interfering with vehicular control.

a. Be sure that doors, seats, mirrors, windows, seat belts, and shoulder restraints are properly secured and adjusted before moving the vehicle.

b. In case you have an operational problem while underway (door unlatched, outside mirror adjustment, insect in the vehicle), get off the highway and correct the problem.

c. Avoid reaching for papers, books, purses, bottles, etc. that have fallen on the floor until you have stopped the car.

d. Learn to adjust the heater, air conditioner, radio, windshield wipers, inside rear view mirror, and fron window (driver's side) without taking your eyes off the road, or if you do, use brief glances.

3.3 Passengers can be either an asset or a liability to the driver.

a. Passengers can serve as "navigators".

b. Passengers should refrain from irrelevant (to the driving task) conversation at the times when the driver needs his full capability of perception and decision-making.

c. Passengers can help the driver by handling non-operational tasks, such as temperature control, radio adjustment, and other activities.

d. Passengers can be held liable for offenses that contribute to an accident.

e. As a driver, if you talk with passengers, it is better to do so without looking at them.

Episode 4. Movement Within Traffic Flow

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
4.1	Following Preceding Vehicles (s)	Given a series of traffic situations involving "fore and aft" relationships, identify relevant cues and select measures under operator control that will reduce the probability of conflict with other highway users. These situations will include freeway approach ramps and acceleration and deceleration lanes.	
4.2	Being Followed by Another Vehicle		
4.3	Meeting an Oncoming Vehicle		
4.4	Passing and Being Passed	Describe the correct step-by-step process for passing another vehicle going in the same direction. Description should include the rationale for each step.	

4.1 To be prepared for unexpected moves by the vehicle(s) in front of you, maintain proper following distance and watch for conditions which would cause the driver to slow or stop.

a. By driving too closely to the vehicle in front:
(1) you must work harder to keep your vehicle in its lane, because you are tracking on the vehicle ahead rather than on a point down the road;
(2) your speed control will be erratic as you judge and adjust your distance behind the vehicle ahead;
(3) your view of conditions ahead and to the sides (escape route) is limited.

b. When you maintain a proper following distance you will occasionally encounter the annoying problem of the "compulsive gap-filler."
(1) Simply drop back and re-open a space for your own protection.
(2) You can help to preserve a safe gap ahead of your vehicle by making sure that, while adequate, it is not too big or inviting especially in heavy traffic.

c. By being alert and anticipating slow downs or stops ahead, you will rarely need to use all of your space cushion, or resort to a screeching, lurching "panic stop." Some warning clues are:
(1) a traffic light that was green for a long time (stale green);
(2) a vehicle preparing to turn;
(3) a driver trying to force his way into another lane;
(4) children playing near the road;
(5) a person getting out of a parked car on the street side; and
(6) a street repair job that's causing a bottleneck.

d. At higher speeds there is a tendency to underestimate the rate of closure between your vehicle and the preceding vehicle (particularly dangerous in the case of a farm vehicle ahead).

4.2 To some extent you are at the mercy of the driver following you, but there are some measures under your control which can reduce the probability of conflict.

a. Dispose of the "tailgater" by accelerating, decelerating, or moving into a slower lane (Let him pass!).

b. Be alert to conditions ahead so you can avoid sudden or needless stops.

c. Flash your stoplights by "pumping" the brake pedal and also use a vigorous arm signal to warn an overtaking operator who seems unaware that you are slowing down.

d. To admire scenery, or to check a street address, avoid slowing or stopping not required by traffic conditions.
(1) An operator doing 35 mph in a stream of vehicles moving at 60 mph, **relatively**, is driving at 25 mph directly against the flow of traffic in his own lane.

e. Signal well in advance of turning and turn from the proper lane. Minimum of six to eight flashes of the directional lights.

f. Never stop on the highway. If you miss a turn, continue to the next turnoff.

g. Before changing lanes:
(1) check the rear view mirrors to see if a safe gap is open, or soon will be open.
(2) use turn signal;
(3) take a quick but adequate glance over your shoulder, on the side you intend to turn.
(4) assuming all is clear ahead, move promptly into the desired lane and stabilize your vehicle.

4.3 Meeting an oncoming vehicle, particularly on a two-lane road, is potentially the most hazardous situation in driving.

a. An oncoming operator may cross the center line into your intended path as a result of:
(1) a momentary distraction;
(2) recovery from pavement drop-off.
(3) blinding rain, snow, fog, dust or smoke;
(4) poor judgment in passing;
(5) swerving to miss a bicycle rider, a pedestrian, a road defect or obstruction;
(6) making a turn;
(7) excessive speed or lack of control on a curve;
(8) falling asleep; or
(9) alcohol or drugs.

b. To reduce the risk of meeting an oncoming vehicle:
(1) keep as far from the center line as practical on four-lane roads, generally use the outside lane;
(2) constantly check the action of oncoming traffic, so that you will be prepared to take evasive action;
(3) do not rely on the approaching car's turn signals;
(4) when lights are called for, always use your headlights, not your parking lights;
(5) condition your mind to the possibility of a vehicle coming across the center line into your path by examining the shoulder and adjacent area and planning an escape route (a ditch is better than a head-on collision);
(6) actually practice evasive steering at lower speeds.

c. In the event that an oncoming vehicle does pull into your lane, a head-on collision must be avoided at all costs.
(1) Brake immediately but carefully to avoid wheel lock-up, blast your horn, and dodge to the right—onto the

shoulder, into a ditch, or into any gap that you can create in the line of cars on the right.

(2) You may have to conflict with vehicles in the right-hand lane to reduce the impact from head-on to sideswiping.

4.4 Safe and efficient passing hinges upon good judgment plus a systematic pattern of action.

a. Pavement markings and signs aid the operator in making a "passing" decision, but he must search for additional information.
(1) Grades (vertical curves) on undulating roads were built for cars a foot or two higher, making it difficult to see modern cars in the dips.

(2) The size and color of oncoming vehicles influence the distance judgment of the perceiver.

b. Communicating your intention to pass (horn or lights) reduces the chance that the operator being passed will swerve into your lane.

c. If the operator withholds his final decision to complete the passing maneuver until he is in the passing lane near the vehicle being passed, he will have more time to assess the situation ahead and also be better prepared mentally to brake and pull back into the right lane should an obstacle appear in the path ahead.

d. If for any reason the vehicle being passed demonstrates erratic behavior before the point of decision is reached, drop back into the right lane and re-evaluate the situation.

e. By building up a clear superiority of speed over the vehicle being passed, the operator minimizes the time he is exposed in the passing lane.
(1) A 15 mph superiority means approximately 8 seconds in the passing lane.

(2) The time required for passing when 15 mph superiority has been built up is the same regardless of the speeds of the two vehicles, **but the distance used up in passing increases as the speed increases.**

(3) Almost one-half mile is needed to make a safe pass at 65 mph if another vehicle is coming from the opposite direction at the same speed.

(4) More time is required to pass a truck, bus or trailer. (Trucks pick up speed on down grades, so you must catch a truck at the beginning of the down grade to pass.)

(5) Because of air resistance and a reduction of power available at the rear wheels, it takes longer to accelerate and pass at high speeds;

f. By remaining in the passing lane until the front of the car being passed appears in the rear view mirror, the driver is assured that he can return to the right lane without cutting off the passed vehicle.
(1) A brief glance over the right shoulder is a good habit to develop, particularly in congested, urban areas.

(2) Give the operator being passed the following distance that you would like to have.

g. In a passing situation, if you misjudged the speed and distance of an oncoming car:
(1) try to brake and fall back in behind the vehicle you intended passing; or

(2) accelerate and return to your lane ahead of the vehicle you are passing;

(3) the choice of swerving off to the left should not be considered when an oncoming vehicle is close because that is his best escape route.

h. When being passed, maintain an even speed, but if the operator passing you misjudges the distance of an oncoming vehicle you may be compelled either to:
(1) accelerate and let him drop back into your lane (make certain that this is his intent); or

(2) decelerate, poise foot on brake, and look for an escape route if needed.

Episode 5. Intersections

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
5.1	Approach	State effective means of handling the situations when shown approach positions to various kinds of intersections, identify and appraise relevant cues.	
5.2	Turning Movements	Descriptions should include lane and speed choices, and communications techniques. Given a series of diagrams or pictures of various kinds of intersections.	
5.3	Railroad Crossing	Explain the mental errors commited by vehicle operators that cause railroad crossing accidents, and how these errors can be overcome. In addition, students will be able to describe the proper steps to follow if their car stalls on railroad tracks.	

5.1 When approaching an intersection, special considerations and checks will facilitate safe and efficient progress for the operator.

a. An **initial** scanning of the intersection and **traffic to the rear** serves to identify those elements which will affect decisions and present potential hazards. Look for traffic controls, impediments to vision, pedestrians at an approaching intersection, and other characteristics of the intersection.

b. An appropriate approach speed—one that is sufficiently low to permit the driver to stop short of the intersection should conditions warrant such a move—depends largely on the traffic controls, traffic volume and how much sight distance the driver has in relation to the intersecting street.
(1) The shorter the unobstructed view of the crossroad, the lower the safe speed for approaching the intersection. (May necessitate a stop.)

(2) A typical "slow down and look" approach to an uncontrolled intersection requires only a few seconds.

c. To negotiate a signalized or signed intersection, operators must apply additional knowledge and skill.
(1) The mere presence of a traffic signal or a sign is a warning of a danger zone, regardless of the color of the light.

(2) Occasionally, you will encounter an operator who attempts to beat the light, or one who simply failed to see the light.

(3) If an operator is stopped for a red signal and it changes to green, he is still required to yield to other vehicles and pedestrians lawfully within the intersection or in adjacent crosswalk at the time such green light is exhibited.

(4) Be extra alert as you approach a "stale green."

(5) "Covering" the brake (foot poised on the brake) as you approach an intersection, minimizes execution time and distance should a stop be required.

(6) Watching your speed, the signals well ahead, and other cues will help you to pace yourself with the signal's timing, especially if it is a "progressive" system.

(7) Operators approaching a yield sign shall slow down, or shall stop and yield the right of way to any vehicle in the intersection or approaching on another highway so closely as to constitute an immediate hazard. Continue to brake as at a stop sign until certain there is no need to stop.

(8) Operators approaching a stop sign shall stop and **yield the right of way** to any vehicle which has entered the intersection or which is approaching so closely as to constitute an immediate hazard.

(9) A flashing red light has the same meaning as a stop sign, a flashing yellow light the same as a "slow" or "caution" sign. (Slow down and be prepared to stop.)

(10) A green light permits the operator to proceed if the way is clear. It does not assure safe passage through the intersection.

(11) When a traffic officer is on duty at a signalized intersection, his direction take precedence over the lights.

d. A careful check to the left, straight ahead, to the right, and left again will furnish the operator with the information needed to make a final decision about passing through the intersection. Each intersection is different and may require a different search pattern.

5.2 A competent operator is marked by his ability to make well-timed and accurate turning movements at intersections.

a. A driver communicates his intention to turn by positioning his vehicle in the appropriate lane and flashing his turn signal.

(1) The proper approach lane for an intersection turn, unless otherwise marked, is the one closest to the direction of the turn. This blocks anyone from trying to pass on the side toward which the driver is turning.

(2) In situations where you suspect an operator following or approaching you does not see your turn flasher because of bright sunlight or inattention, use an arm signal, also.

b. At a signalized intersection it may be appropriate to enter the intersection and wait for a safe gap in traffic to complete a left turn movement.

c. Keeping your wheels straight when you stop to wait for a safe gap in traffic to make a left turn, minimizes the chances of being driven into the lane of oncoming traffic if struck from the rear.

d. Wait to make your turn onto a main highway until you have space and time to gain cruising speed without interfering with the progress of other vehicles.

e. Conflicts at intersections are reduced by turning into the first lane going in your direction. Traffic engineers sometimes modify this principle to meet local conditions.

5.3 Through an understanding of the hazards involved, and heeding certain elementary but crucial precautions, operators can safely cross train-car intersections.

a. Operators should consider that:

(1) most railroad crossing accidents result in fatalities;

(2) a train gives the illusion of going slower than it is actually traveling;

(3) by the time that an engineer can tell that your car is in the way, it is already impossible for him to stop. (A full emergency stop from 60 mph takes 1½ miles.)

(4) in a large percentage of railroad crossing accidents the vehicle runs into the side of the train, because the operator was over-driving his vision and perception; and

(5) with fatal results, some operators have taken familiar crossings for granted and assumed that no train would be coming. (You are just as dead if struck by an unscheduled train.)

b. To move safely through a vehicle-train intersection:

(1) identify and conform to warning signs, signals and protective devices;

(2) look and listen for approaching trains, but do not put the sense of hearing under handicap (reduce the radio volume, crank down the side window, and stop the conversation);

(3) if a train is approaching close enough to constitute a hazard, or if the warning signals or gates are operating, stop a safe distance from the nearest rail;

(4) wait for a train to clear a sufficient distance to insure good visibility because another train may be coming from the same direction, or from the opposite direction on an adjacent track; and

(5) drive onto a railroad track only when you are certain that you have sufficient speed so that the momentum will carry the car past the tracks should the engine fail, and make certain that no other vehicle in front can prevent your uninterrupted crossing.

Episode 6. Pedestrians and Animals

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
6.1	Crosswalks & Laws	Identify marked and unmarked crosswalks and state what implications they have for driver and pedestrian behavior.	
6.2	Types of Pedestrians	Classify pedestrian actions typical of various age groups when shown pictures (or word descriptions) of pedestrians in traffic scenes.	
6.3	Critical Areas	Identify the places or conditions which are particularly critical as far as vehicle operator-pedestrians interaction is concerned, and select appropriate courses of action from given alternatives to minimize the hazard.	
6.4	Pedestrian Responsibilities	Describe the legal and moral responsibilities of pedestrians.	
6.5	Animals	Indicate why and where animals can be dangerous to the vehicle operator and what can be done to minimize these dangers.	

6.1 Because he is so vulnerable, fragile and without protection, the pedestrian has been given the right-of-way over the vehicle at all intersections and at any other point at which a crosswalk has been placed across a street. In fact, under no circumstances is the operator of a motor vehicle privileged to exercise the right-of-way over a pedestrian.

a. Usually, intersection crosswalks will be marked, but even if they are not, a pedestrian has the right-of-way from curb-to-curb. (The crosswalk is the extension of the sidewalk at the intersection.)

b. Marked crosswalks may be designated anywhere they are needed.

c. Pedestrians on a crosswalk (unless walking against a red light) have the right-of-way over vehicles.

d. Crosswalks give the pedestrian more protection in some states than others.

6.2 Perceptions of pedestrians vary with the individual and changes with the age of the person.

a. Since many pedestrians are non-drivers (older people and children), but practically all drivers are pedestrians at times.

b. You can assume that children, old people, non-drivers, or anyone impaired by alcohol or drugs may have deficient judgment.

c. Elderly pedestrians tend to base their judgments on when to cross on the movement of other pedestrians and vehicles, rather than on traffic signals.

d. The speed of an oncoming vehicle (closure rate) is difficult to judge, even for a pedestrian with perfect eyesight and excellent depth perception.

6.3 Operators should be especially alert for pedestrians:

a. around schools, churches, parks and playgrounds;

b. when children are playing on or near the road (they may dart out or throw objects on the road);

c. at intersections, and in mid-block locations where there are department stores on opposite sides of the street;

d. anywhere near a school bus;

e. after dark, almost anywhere;

f. while passing parallel parked vehicles, and delivery trucks (possibility of people alighting from these vehicles).

6.4 Although the pedestrian has been granted certain protective privileges, he bears certain legal and moral responsibilities in traffic.

a. The pedestrian is expected to cross city streets at crosswalks, if a hazard is created by doing otherwise.

b. At signal controlled intersections the pedestrian is required to obey the "walk" and "do not walk" signals.

c. The law does not allow the pedestrian to leave the curb suddenly and walk into the path of a car close enough to cause a hazard.

d. If you are the pedestrian and have to walk on a country road at night:
(1) stay off the traveled portion of the highway;
(2) walk toward oncoming cars so that you can see them;
(3) wear or carry something that has a light color (below the waist because of headlights), so drivers can see you; and
(4) preferably, carry a light.

6.5 Animals are especially unpredictable, but if an operator is alert for the potential hazard of an animal dashing into his path without warning, and adjusts his speed accordingly, collisions can be avoided.

a. Knowing the habits of deer is one way of helping to reduce the numerous vehicle-deer accidents (estimated that well over 100,000 deer are killed annually by vehicles). (106)
(1) Normal daily movements of deer include crossing highways. Heed deer crossing signs by speed reduction).
(2) Deer are attracted to roadways for feeding, an activity undertaken chiefly during the hours of darkness. The road shoulder normally offers highly palatable grasses and legumes.
(3) One deer often means that more deer are present.
(4) It is believed that the shadow behind the animal created by the headlight startles the deer when he moves, so that he bolts out into the path of the vehicle.
(5) Many deer will change direction and bounce back across the road when confused. They usually retreat in the direction from which they came.

b. Observation, speed reduction and a state of readiness are the most effective responses for the driver when there is a possibility of an animal threatening his path.
(1) Operators need to watch for dogs and cats along the roadside, and adjust speed and position to minimize the threat.
(2) At night the reflective eyes of an animal are a cue to the operator to be on the alert.

Episode 7. Motorcycles

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
7.1	Accident Facts	Identify the major causes of motorcycle accidents and compare their causes and results to accident facts of other system users.	
7.2	Performance Characteristics	Identify performance variables by indicating to what extent they vary from passenger cars and other system vehicles.	
7.3	Prediction	Given a series of highway scenes to analyze (slides), identify motorcyclist's intentions relative to the perceptual cues.	
7.4	Operator Condition & Behavior	Given a list of irresponsible cyclists behaviors, classify probable causes and list corrective defensive actions imposed on other system users.	

7.1 Number and severity of motorcycle accidents is considerably higher than that of other system vehicles.

a. Motorcycle accidents coincide as to the days of the week and hours of the day to that of motor vehicle accidents.

b. Motorcycle accidents are more likely to occur on a clear, dry day.

c. Personal injuries to the rider usually are to the head and appendages.

d. In over 80 percent of car-cycle accidents, a vehicle operator cut off a cyclist.
(1) Driver turning left cut off approaching cyclist.
(2) Driver cut off riding path of cyclist when turning right.
(3) Other car-cycle accidents happen on the straightaway when a driver cuts off a cyclist when attempting to pass.

e. Accident causation factors include:
(1) Driver did not see cycle.
(2) Driver saw cycle and believed he could still perform the maneuver.
(3) Driver saw cycle too late.
(4) Driver failed to yield.
(5) Driver was speeding.
(6) Driver following too closely.
(7) Age and experience of cyclist.
(8) Cyclist was distracted.
(9) Cyclist's emotional mood.

f. Costs of traffic accidents and congestion.
(1) Car-cycle accidents average approximately $750.00 per accident in property damage, most of which is to the cycle.

7.2 The motorcycle performance characteristics varies measurably from those of passenger cars.

a. Acceleration capability is related to and is dependent upon cycle's horsepower and weight and the weight of the cyclist and his passenger.

b. Directional stability and handling capability can seriously be affected by road surface.
(1) "Traction reducers" include: water, paper, frost and ice, dew, gravel, sand, leaves, oil, paint strips, bumps, bridge gratings, sewer covers, tree sap, grain, water from auto's air conditioners, mud, and other objects on the road.

c. A cyclist will try to maintain directional stability and handling capability by varying his lane position.

d. Handling capability also is affected by cyclist's hand signals. Since most of his controls are hand-operated, the cyclist must temporarily take his hand off the controls to signal his intention. He often may supplement electric directional signals with hand signals.

e. Complex handling of controls under a variety of road surfaces, traffic and leaning attitudes of the machine make demands upon the cyclist.

f. Stability in turns and curves is dependent upon the road surface just before, into, and just after the turn or curve. It also is dependent upon body and machine lean (especially in crosswinds) and on passenger's weight and actions. Nervous or unkowledgeable passengers may not lean with the rider, thereby adversely affecting travel path.

g. Deceleration and braking.
(1) Downshifting and throttling back can slow cycle.
(2) Cycles are equipped with front and rear brakes which supply 60-70 percent and 30-40 percent of braking power, respectively.
(3) Since controls are easy and close for the cyclist to operate, his reaction time may be reduced below that of other drivers.
(4) Under normal conditions, and up to approximately 30 mph, most cycles can be stopped in a shorter distance than other vehicles. Allow a greater than normal following distance when behind a cycle traveling 30 mph or below.
(5) Above 30 mph, many vehicles can be stopped in a shorter distance than most cycles. It is difficult for the cyclist to employ 100 percent braking effort and remain upright. This is even more true in a turn or curve where the cycle is in a leaning attitude.

h. Loading and load distribution.
(1) Passengers and luggage adversely affect a cycle's center of gravity by moving it higher and to the rear, thereby crowding the operator making it difficult for him to shift, brake and turn.

7.3 Actions and informational cues identified by other users can greatly benefit the cyclist.

a. Because of cycle size, it is difficult to estimate cycle speed.

b. Since electric signals do not cancel automatically, it is possible that the signals would remain on after the intent of their use has passed.

c. In order to be seen, cyclists may ride with the headlight on.

d. Movement of vehicle—speed change, direction of front wheels.
(1) Cyclists vary position in lane to see what is happening on the road ahead and to be seen by other drivers.
(2) To maintain control, cyclists usually will slow considerably before riding onto a gravel road or a road that is sprinkled with gravel.
(3) When approaching a sharply angled railroad crossing, a cyclist will slow and maneuver in such a way that he may cross it at nearly a right angle.
(4) A cyclist may modify his path of travel slightly in order to avoid road surface objects or conditions which may reduce his control.

e. Development of efficient visual habits.
(1) Because of varied lane positions cyclists may hold on the road, check from side to side, especially at intersections for the presence of cyclists.
(2) Check mirrors and monitor displays regularly.
(3) Look for cyclists, especially in the two rear blind spots.

7.4 Prediction of the probable behavior of the motorcyclist can be difficult for non-riders.

a. Vehicle operators and cyclists vary in their experience and ability to control their vehicles—with many being relatively inexperienced, especially early in the riding season (March-June)

b. Common errors of system users are:
(1) Vehicle cuts off cycle (80 percent of all cycle accidents). (a) Left turns. (b) Right turns.

c. Vehicle overtaking cycle does not allow enough space for cycle after passing.
(1) Vehicle tailgating cyclist.

d. Because of cycle size, it is difficult to estimate cycle speed.

e. Noise and small size make cycles appear to be fast-moving.

f. The cyclist speed will greatly vary in accordance with road and weather conditions, and cycle power capabilities.

g. The cyclist's reaction time will be faster than motorists due to location of cycle controls.

h. Braking distances vary considerably from other system vehicles.
(1) At 30 mph and below, a cycle can be stopped faster than an automobile.
(2) At speeds over 30 mph, cycles need a longer stopping distance than automobiles.
(3) To warn motorists of their intent to slow-stop, cyclists may apply the foot (rear) brake first and thus cause the taillight to glow (1969 to present—stoplight activated by either hand or foot brake).
(4) When adverse road and-or weather conditions exist, cyclists will travel more slowly and brake sooner than under normal conditions.

i. Cyclists should be given a three second following distance under normal conditions due to their machine's ability to stop quickly. Under adverse road-weather conditions, follow cycles at a four second distance.

j. When changing lanes or passing a cyclist, allow the cyclist as much space in his lane as you would allow a motor vehicle.

k. When returning to the right lane after passing a cycle, give the cycle an adequate "cushion" by returning only when you can see that the cycle is behind you.

l. Follow cyclists at a greater distance when roadway surface is sprinkled with gravel, sand, or other "traction reducers" such as chuckholes.

7.5 The motorcyclist is confronted by physical conditions which can affect his operational capability.

a. Sources and nature of fatigue.
(1) Riding in the open wind creates wind buffeting and noise (wind effect can camouflage fatigue).
(2) Engine noise, vibration and road shock.
(3) Monitoring traffic and the roadway can overtax a rider more quickly than a driver.

(4) Cyclists should take breaks often and limit their daily riding to fewer hours than when driving an auto.

b. Because they feel they can control their machines, cyclists may over-predict their capabilities in some situations where other responses are important to cyclists' safety.

c. Most cyclists do obey traffic laws and cooperate with other drivers in the highway transportation system, but some tend to display emotions when riding more than automobile operators.

d. A few cyclists may display a daring image.
(1) Failure to share roadway.
(2) Lack of, or failure to use, safety gear.
(3) Taking unnecessary risks.
(4) Punish themselves on cycles to prove superiority.

SLIPPERY WHEN WET

SECTION 1. ON HIGHWAY TASKS

Unit C. Critical Situations

UNIT OBJECTIVE:

Students will be able to demonstrate the correct techniques for coping with critical situations (some under simulated conditions).

EPISODE TITLES:

1. *Response Analysis*
2. *Traction Loss*
3. *Vehicle Malfunctions and Failures*

UNIT C. THE CRITICAL SITUATIONS

Episode 1. Response Analysis

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Typical Responses	Identify critical situations that occasionally face a vehicle operator, predict how unprepared operators are likely to respond, and explain why they respond that way. Students will be expected to relate their analysis to the basic human functions-identify, predict, decide and execute.	
1.2	Pre-Conditioning	Explain how a vehicle operator can increase the probability of responding correctly in a critical situation and illustrates with examples in both non-traffic and traffic situations.	

1.1 Critical situations (skidding, brake failure, tire blowout, etc.) allow little or no time for decision-making, and frequently produce the wrong response.

a. Skilled reactions tend to become disorganized under emotional stress or panic.

b. Most operator panic or near-panic occurs when the operator is surprised by a **hazard**.

c. A strong stimulus which surprises the operator tends to produce an impulsive or unplanned response.

d. Correct automatic reactions must be learned in advance. Otherwise, emergencies may and frequently do evoke an improper response.

1.2 Some experience with a critical situation, either in reality or by means of mental rehearsal, reduces the emotional impact and increases the probability of performing the correct response.

a. Panic can be avoided by thinking (panic tends to paralyze the reasoning center of the brain) and that is why it is so important to know what to think and how to perform.

b. By creating a continual series of imaginary situations and hazards (hypotheses or guesses based on experiences) an operator prepares himself in advance to do the right thing in a crucial situation.

c. After much imagination and repetition, these mental sets tend to sink below the level of awareness and become semi-automatic.

d. The operator who can control **himself** in an emergency is the kind of person who would be more apt to control his vehicle.

Episode 2. Traction Loss

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Over-powering	Classify the causes, prevention and correction for the traction losses included in Segments 2.1 through 2.6.	
2.2	Over-braking		
2.3	Turns & Curves		
2.4	Unequal Traction		
2.5	Hydroplaning		
2.6	Snow, Mud or Sand		
2.7	General Measures	Formulate a set of principles and practices for preventing and correcting any kind of traction loss.	

2.1 Traction is markedly reduced when your wheels are spinning, the consequence of "over-power", usually on take-off.

a. The rear end attempts to pass the front end in a spin-around skid. Once a car spins beyond a certain angle, estimated to be about 20° to 25°, control is totally lost. (Steering angle of most cars)

b. The skill of starting on a slippery surface lies in gently applying the power to the drive wheels so that they can grip.
(1) For manual transmission, start in second by slipping the clutch.
(2) For automatic transmission, apply gentle acceleration.

2.2 Traction is lost when your wheels are skidding from over-braking, brake malfunction, or improper use of the shifting lever and the accelerator.

a. When the grip of the brakes or tires is unequal, the car tends to swing or pivot around the wheel where the grip is the strongest.

b. An all-wheel braking skid occurs in a panic stop even with good brakes. To regain traction release brake because you **cannot steer a skidding car when all four wheels are locked**.

c. Changing to a lower gear ratio on icy surface at too fast a speed can "trigger" a skid; and releasing the accelerator suddenly can produce the same result.

2.3 When the wheels of a vehicle generate unequal traction due to pavement conditions, control of the vehicle may be threatened without any changes in direction or speed.

a. Icy or snowy patches are sometimes found where the sun does not shine on the road surface.

b. When one or two wheels drop off the edge of the pavement, unequal braking and steering result.
(1) A firm grip on the steering wheel is necessary to keep the car traveling straight ahead straddling the pavement edge. Fight the tendency of the wheel to pull right.
(2) The driver must resist any immediate urge to whip the car back on the pavement.
(3) By easing off the accelerator the motor will slow down the vehicle gradually.

(4) If braking seems necessary, a gently on-off technique enables the driver to maintain control.

(5) A thorough visual check ahead, to the side, and to the rear is essential before returning to the roadway.

(6) After speed has been reduced, the wheels can be turned sharply (depending upon the shoulder drop), permitting the vehicle to climb the pavement edge.

2.4 The right mix of speed, fluid on the road surface and tire tread can result in a vehicle losing all contact with the road and therefore, loss of traction (hydroplaning).

a. As vehicular speed increases on wet road surface, a wedge of fluid builds up at point of contact between the tires and road until the tire begins to ride on ("plane") the film of water. Usually the operator has no warning of when the critical speed has been reached until a change in speed or direction throws the car out of control.

(1) At 30 mph or less, tires with tread will cut through the water and remain in complete contact with the road.

(2) At 30 to 55 mph, water wedge may penetrate tire-road contact and partial hydroplaning results.

(3) At 55 mph or more, water wedge may increase and tires lose complete with the road.

b. Besides speed, whether or not hydroplaning occurs depends upon the depth of water on the road surface, tire tread (depth and design) and tire pressure, wheel alignment and road surface.

(1) Tires with open-treading (thread-like design in a tread) tend to push the water out of the way in a squeegee action.

(2) Properly inflated tires with good tread cut better into a film of water.

2.5 With "know-how" and proper equipment, an operator can extricate his vehicle if it becomes mired in snow, mud or sand.

a. The most effective means of moving a vehicle mired in snow or mud is to provide better friction between the drive wheel tires and the surface by spreading sand, cinders, an old piece of carpeting, traction mats, pieces of brush, or anything else that increases friction.

b. Sometimes the process of "rocking" the vehicle, skillfully, will be the solution (a questionable practice in an automatic shift vehicle).

c. When you are stopped on two different surfaces, one rear wheel may encounter less resistance to turning than the other—one spins while the other does nothing.

(1) On most vehicles, if one wheel spins, the car is just as stuck as though both were spinning.

(2) Some cars now have a limited-slip differential system that forces both wheels to turn, even though one has very little traction.

d. To reduce the probability of becoming stuck in mud, snow or sand:

(1) make every effort to keep moving—shift into second or low gear before entering the section;

(2) try to avoid driving in deep ruts.

e. If engine stalls in a snow bank, open the car windows and shovel the snow away from the exhaust pipe to prevent the danger of carbon monoxide poisoning.

2.6 A competent operator rarely allows his vehicle to lose traction, but if he does, he possesses the capability to cope effectively with the situation.

a. The probability of skidding can be minimized by:

(1) lengthening sight distance and reacting to developing well in advance;

(2) matching vehicle speed to road conditions;

(3) smooth and gradual speed control, tracking and braking (avoid overpowering, oversteering and over-braking);

(4) periodically checking the "feel" of slippery surface by gently applying the brakes when there is no traffic near.

b. To regain traction and return the vehicle to its normal course when the rear end of the car slides around:

(1) steer in the direction of the skid only far enought to point the front wheels in the direction you want to go (over-correction can cause a violent counter-skid to the opposite direction);

(2) as soon as you feel the rear end starting to return to course, return the steering wheel to its straight ahead position.

Episode 3. Vehicle Malfunctions and Failures

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Brake Failure	Describe the steps drivers should follow to handle the vehicle malfunctions and failures included in 3.1 through 3.9.	
3.2	Steering Failure		
3.3	Tire Failure		
3.4	Accelerator Stuck		
3.5	Headlight Failure		
3.6	Hood Flies Up		
3.7	Engine Stalls		
3.8	Engine Overheats		
3.9	Emergency Stop		

3.1 Any decrease or loss in braking power compels the operator to maintain steering and positioning control and regain speed control.

a. When brakes fail:

(1) pump the brake pedal in an attempt to build up pressure and restore braking action.

(2) Downshift to permit braking.

(3) If that action does not suffice, apply the parking brake while holding release lever.

(4) Find an escape route—a safe exit from the highway; and

(5) communicate your emergency situation to other highway users (sound horn, flash lights)

b. In extreme cases it may be necessary to slow the vehicle by:

(1) running along an embankment;

(2) scraping against a curb;

(3) driving into bushes, hedges, or snowbank; or

(4) sideswiping a row of parked cars.

c. If uneven action results from wet brakes, dry them by:

(1) staying in low gear and pumping them gently; or

(2) applying slight pressure on accelerator while brakes are being applied with the left foot.

3.2 Steering failure is somewhat uncommon, but extremely dangerous.

a. If you have power steering, you can gain control by gripping harder and steering more firmly.

b. If something has gone wrong with the steering, all you can hope to do is stop as quickly and safely as you can.

3.3 Steering control is threatened when a tire blows out.

a. If a front tire blows out, the front wheels tend to be pulled in the direction of the blowout.

b. If a rear tire blows, the rear of the car may swerve or sway violently.

c. No matter which tire blows out:
(1) Firm your grip on the steering wheel.
(2) Ease up on the accelerator, allowing engine braking to slow the car.
(3) Brake only when car is under control.
(4) Drive **entirely** off the road to a level spot, even though you may ruin the tire; and

d. Directions for use of the jack are mounted on the inside of the trunk lid.

3.4 When the accelerator pedal sticks, power must be cut off the drive wheels.

a. Immediately place the gearshift lever in neutral, apply brakes, pull off the road.

b. If the vehicle does **not** have power brakes or steering, turn off the ignition first is an alternative technique.

3.5 Even with careful maintenance, headlight failure may arise.

a. slow down quickly, keep the car in its path;

b. try the parking lights;

c. flash the brake lights, and turn on the right turn signal.

3.6 If the hood flies up while driving;

a. Look under the center of the opened hood or out of the left window, slow down quickly, and keep the car in its path.

b. To prevent this situation from occurring, check to see that the hood is properly closed.

3.7 When the engine stalls during movement:

a. usually it can be restarted by placing the selector level in "N" (clutch down in manual transmission) and turning the starter switch while the car is moving;

b. if these techniques are unsuccessful, look for the first opportunity to signal; drift off the roadway.

3.8 If engine overheating occurs, as revealed by the temperature light or gauge;

a. pull off the road, place shift lever in neutral, and run engine at a fast idle;

b. watch the temperature indicator—if temperature reduction is not quickly apparent, stop the engine;

c. raise hood but do not remove cap—wait for engine to cool and, while waiting, examine for external leaks, broken fan belt or anything that might slow the movement of the coolant or air;

d. when system cools, remove cap carefully and check coolant level;

e. if fire breaks out under hood:
(1) use a dry chemical fire extinguisher
(2) if a fire extinguisher is not available try to smother the fire with a blanket.

3.9 Almost every driver has the experience of his vehicle becoming disabled or out of gas.

a. If the vehicle fails on the traveled part of the road, make every reasonable effort to get it off the roadway.
(1) turn on warning flashers.
(2) tie something white to the door or radio antenna—raise hood and trunk;
(3) seek help.

b. To "stretch out" a low supply, use easy starts, moderate speed, and coast.

SECTION 1. ON HIGHWAY TASKS

Unit D. Controlling The Consequences of Highway Collisions

UNIT OBJECTIVE:

Students will be prepared to assume their moral, legal and financial responsibilities if they are involved in, or come upon the scene of, a highway collision.

EPISODE TITLES:

1. *Highway Accidents*
2. *At the Collision Scene*
3. *Financial Responsibility*

UNIT D. CONTROLLING THE CONSEQUENCES OF HIGHWAY COLLISIONS

Episode 1. Highway Accidents

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Traffic Accident Facts	Classify traffic accident data, and suggest implications of this data for system improvement.	Teacher-led presentation of national state and local traffic accident data. (visual aids) Analysis of charts and graphs of traffic accident data looking for underlying reasons that explain the surface facts.
1.2	Mutiple Cause Concept	Define the multiple cause concept, and identify the implications this concept has for driver behavior and highway safety management.	Students will analyze the factors involved in a traffic accident to determine "the" cause, and from the process they will discover that accidents have multiple causes involving all three components of the system.
1.3	Restraint Systems	Explain the reasons for wearing a three-point safety belt.	

1.1 Highway accident facts reveal the magnitude problem.

a. Highway accidents represent a major social and economic problem.

(1) At the present annual toll of fatalities, the two millionth person will be killed on our highways in the mid-1970's.

(2) The mileage fatality rate (per 100 million miles of driving) in the United States declined quite steadily from 9.8 in 1946 to a low of 5.16 in 1961. It has fluctuated only slightly lower since then.

(3) On the average, one person dies as a result of a motor vehicle accident every 10 minutes, and a personal injury occurs every 17 seconds.

(4) Accidents are the leading cause of death in the U.S. from age 1 through 37.

b. An analysis of rural-urban traffic accident statistics reveals some widely different distributions of accident types.

(1) Approximately two-thirds of motor vehicle deaths occur in places classified as rural.

(2) In urban areas, about two-fifths of the fatalities are pedestrian.

(3) Approximately one-third of rural fatalities result from one-car accidents.

(4) Injury and property damage accidents occur more frequently in urban places.

c. Most **non-fatal** highway accidents appear to happen to average people under normal circumstances.

1.2 Highway accidents, as well as other accidents, generally result from a combination of man-machine-environmental factors acting in a closely interwoven fashion (multiple cause concept).

a. Each of the circumstances which contributes to an accident is a cause, while the cause is the combination of these factors, each of which is necessary but none of which is by itself sufficient.

b. Of the three components in the system (man-machine-roadway) the operator who almost always contributes one or more causes to the accident chain, is dominant in the sense that he possesses the ability to compensate for deficiencies in the other two components.

c. Operators may "get away with" violations for years because all the other essential ingredients for the accident are not present. On the other hand, an accident could occur the first time the violation is committed.

1.3 Restraint systems appear to offer the single best protection for the automobile occupant during an impact, because they prevent ejection—a leading cause of death.

a. The best restraint system for American cars, at present, the 3 point type which includes both a lap belt and a shoulder strap.

(1) The lap belt, correctly mounted and worn, provides support to the body's sturdiest framework, the pelvic girdle.

(2) The lap belt alone has the disadvantage of allowing the head and thorax to swing free in a "jack-knife" motion during impact, which frequently results in the head striking the instrument panel.

(3) The diagonal shoulder belt provides restraint to the upper torso, from the hip on one side to the shoulder on the opposite side.

(4) When the diagonal belt is used alone, there is nothing to prevent the lower torso from swinging forward and rotating out of the diagonal belt. **The shoulder strap is not to be used without a lap belt.**

b. Usually at about the age of three or four, a child can begin using standard safety belts, but prior to that time special arrangements and devices are required.

c. Entrapment accidents (fire, car submerged in water), given as an argument against seat belt use, constitute a small fraction of all accidents; furthermore, in this type of accident you are more likely to stay conscious with seat belts fastened and so you are more likely to escape.

d. Recent court decisions have ruled that the plaintiff's failure to wear safety harness with which the car was equipped at the time of the accident constituted contributory negligence.

e. New and better restraint systems will be developed. A "passive" restraint system, which does not require passenger activity, would be better.

Episode 2. At the Collision Scene

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Stoping	Given a description of an accident scene, describe: 1. when, where and how to stop	
2.2	Marking and Controling the Scene	2. what action to take regarding the injured, and summoning assistance;	
2.3	Assisting the Injured	3. how to mark and control the scene; and	
2.4	Words & Deeds	4. what to do about exchanging information, witnesses and recording pertinent information.	
2.5	Accident Reporting	Given the details of an accident and imagining he was one of the drivers involved, student will be able to fill out an accident report and indicate where the form(s) should be sent.	

2.1 When a highway user has knowledge of when, where and how to stop following an accident there is less chance of a negative legal or safety consequence.

a. Kansas laws require that the operator of a vehicle involved in an accident shall:
(1) immediately stop his vehicle at or near the scene;
(2) make the stop without obstructing traffic more than is necessary; and
(3) immediately return to the scene of the accident.

b. Highway users have a moral, if not legal, responsibility to stop when they come upon an accident shortly after it happens, when it is apparent that their assistance is needed.

2.2 Marking and controlling an accident scene helps to prevent a single accident from turning into a multiple accident.

a. Smoking should be prohibited because of the danger of fire.

b. At night, flares, reflectors, flashlights or some other warning device should be used.

c. In the daytime, the accident scene also needs to be protected, particularly if it occurs near a hill crest, sharp corner or bridge.

2.3 Your first duty, after stopping your car, is to check for injured persons and summon assistance if necessary.

a. Make sure the injured person is comfortable, but do not move him unless you are sure of correct first aid procedures.

b. In assisting the injured, one must not step over the boundary of first aid and into the area of treatment.

2.4 If you are involved in the accident, what you say and do at the scene may be very important in the follow-up to the accident.

a. Do not argue, accuse anyone, sign any papers or admit that you were wrong. (Hasty emotional admissions can be costly).

b. Cooperate with the police by advising him of the basic facts briefly.

c. Exchange information with the other operators regarding name, addresses, vehicle registration and driver's license.

d. If you strike an unattended vehicle: leave identification at the scene (name, address and telephone number), and copy the license number of the vehicle you struck. Report the accident to appropriate law enforcement authorities.

e. Obtain names and addresses of witnesses and attempt to obtain from them a signed statement to what happened.

2.5 The proper method and timely filing of a formal accident report tends to reduce the possibility of legal and financial entanglements following an accident.

a. Kansas law requires the driver of a vehicle when involved in an accident resulting in injury to or death of any person or property damage of one hundred dollars or more shal immediately report such accident to the local police department, county sheriff, or the state highway patrol.

b. Kansas requires a written report to be sent to the Motor Vehicle Department within 24 hours if the accident resulted in death, personal injury or property damage of $100 or more.

c. An approved accident report form may be obtained from any trooper, driver license examiner, sheriff's office or police station.

Episode 3. Financial Responsibility

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Nature of Insurance	Relate the basic principle of insurance to that of reducing the consequences of traffic collisons	Teacher-directed discussion of various types of insurance-life, medical, homeowner, etc.-would draw out the basic principal of insurance: spreading of risk. This could then be related to motor vehicle insurance.
3.2	Liability	Define liability, negligence and judgment. In addition, construct a situation which would point out the values of motor vehicle insurance with respect to liability.	A simple one-car accident illustrating negligence is described. From this illustration other components could be brought in which would complicate total negligence such as another car, yield sign or chuck holes. Students then would be asked to state why liability insurance would or would not be beneficial in each case.
3.3	Liability Insurance	Determine if the amount of liability insurance is adequate when given the amount of judgment awarded to a plaintiff from civil action growing out of an automobile accident and the amount of insurance carried by the defendent.	A handout giving a brief description of each type of insurance is distributed as the episode progresses. A space is provided for students to supply the insurance type nomenclature. The spaces are completed as the discussion progresses.
3.4	Physical Damage Coverage	Identify and distinguish between damages claimable under collision insurance coverage and comprehensive auto insurance coverage.	After all types are discussed, an earlier collision situation would be recalled and negligence established. The amount and type of insurance of each owner involved would be stated and each student would analyze the facts to determine what costs would be paid by each person involved.
3.5	Special Insurance Coverage	Summarize the benefits of medical payment insurance, road services insurance and uninsured motorist protection. Identify the value of a financial responsibility law and explain how to satisfy the requirements of such a law.	

3.1 A person causing injury or damage to another person's self or property is liable for his actions (a legal obligation).

a. As an operator, you can be held responsible in both criminal and civil actions.
(1) Criminal responsibilities is between you and the state.
(2) Civil responsibility is between you and the person who has been injured or whose property has been damaged.

b. Negligence is the key to whether or not a person is declared liable for damages to another individual's person or property.

(1) A person is negligent when he has failed to act as a reasonable and prudent person would act under the circumstances.

(2) Right-of-way and negligence should not be confused. You can be guilty of contributory negligence when you strike a vehicle that went through a red light. Operators have a legal and moral responsibility to avoid conflict with other highway users, despite apparent wrong actions of others.

c. Liability insurance pays for judgments against you, **within the limits of the policy**. If the judgment is more than the policy limit, you must pay the excess.

3.2 Liability insurance furnishes protection in case you are proved liable for accident damages or sued.

a. Bodily injury liability insurance protects you for the injuries your actions cause to another highway user.

(1) A judgment for bodily injury damages could include hospital and doctor bills, loss of wages, and pain and suffering. The last item could be the largest.

(2) Bodily injury insurance has two limits—a limit for each **person** and a limit for each **accident** (usually sold in blocks of thousands, like 10-20, 20-40, 50-100, etc.).

b. Property damage liability insurance (P.D.L.) protects you for the damage you and your car does to the property of other persons.

c. Liability insurance is the most important motor vehicle insurance coverage.

(1) If we hurt someone or damage his property, the amount that he could collect could be huge.

(2) If we cannot satisfy a judgment, the court may sell our real estate and personal property or take it out of our wages until the judgment is paid (garnishment).

d. Liability insurance protects the owner of the vehicle ("named insured") plus all members of his household and anyone else who has **permission** to drive the car.

(1) Also protects the "named insured" and his family while driving a car which belongs to someone else.

(2) The "named insured" is also protected if someone outside the family drives his car with permission.

(3) A son or daughter with permission to drive the family car does not have authority to give others permission to drive.

3.3 Physical damage insurance is designed to compensate you for certain losses caused to your vehicle and-or property.

a. **Collision insurance** pays for damages to the policyholder's vehicle caused by collision or upset.

(1) Protects **your** vehicle against the damage you or others might do to it while it is being operated.

(2) Collision insurance is usually sold on a "deductible" plan which can be purchased in varying amounts, but the lower the deductible amount the higher the premium. The insurance company pays for the repairs over the deductible amount.

(3) Collision protection insures your vehicle for the actual cash value at the time of the loss which could be less than its replacement cost.

b. **Comprehensive auto insurance** pays for damage to the policyholder's vehicle caused by something other than a collision or upset.

3.3 There are many additional types of insurance that fall into the special coverage category.

a. **Medical payments** insurance covers medical and funeral expenses, up to policy limits, for the policyholder and others injured or killed while riding in his car.

(1) This insurance pays regardless of who caused the accident, but will not if the other driver is totally liable.

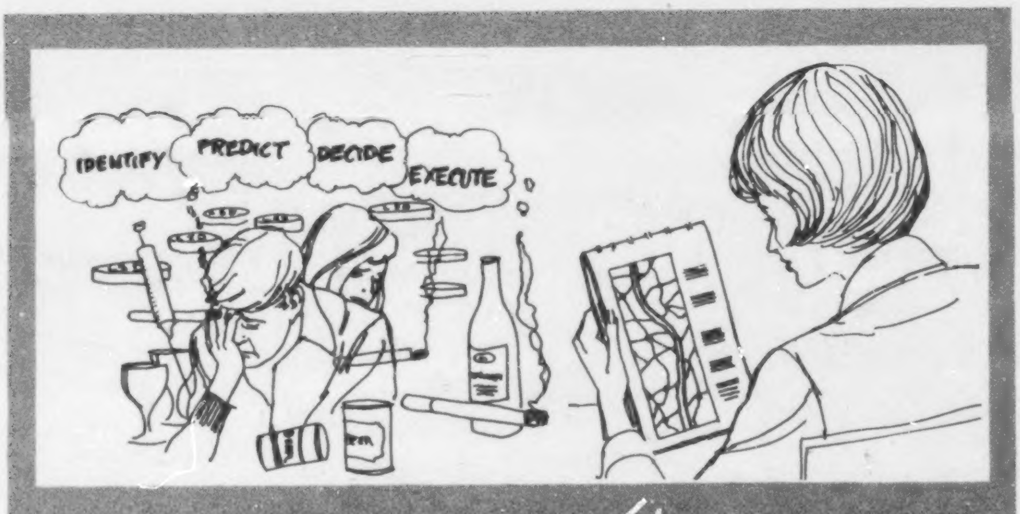
(2) Extended medical payments insurance, available from most companies, covers the policy-holder and his family when hurt in or by other vehicles when not in their own car.

b. **Road service** insurance pays towing charges if the policyholder's vehicle breaks down on the road.

c. **Uninsured motorist protection** protects the policyholder, his family and other passengers in his car from bodily injury losses caused by an uninsured or hit-and-run driver who is legally liable for the damages.

(1) Uninsured motorist protection does for you what **bodily injury insurance** would have done if the other fellow had bought it ($10,000-$20,000 limit).

(2) Uninsured motorist insurance pays you only what you were legally entitled to get but couldn't collect because the driver to blame was not insured.


IDENTIFY
PREDICT
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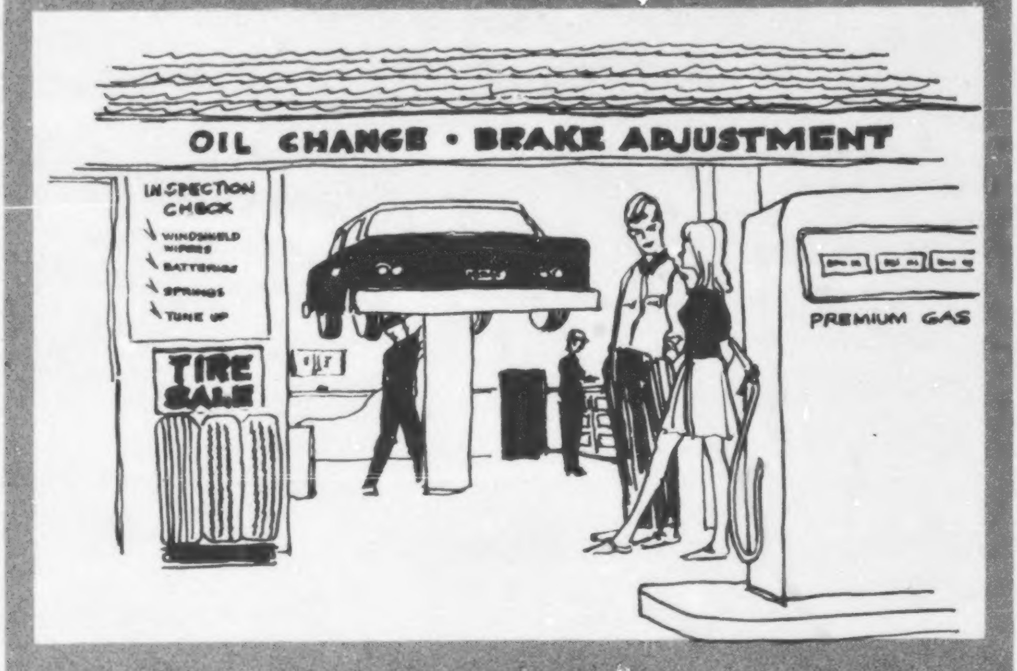
EXECUTE

UNIT A


OIL CHANGE • BRAKE ADJUSTMENT
INSPECTION CHECK
WINDSHIELD WIPERS
BATTERIES
SPRINGS
TUNE UP
TIRE SALE
PREMIUM GAS

UNIT B

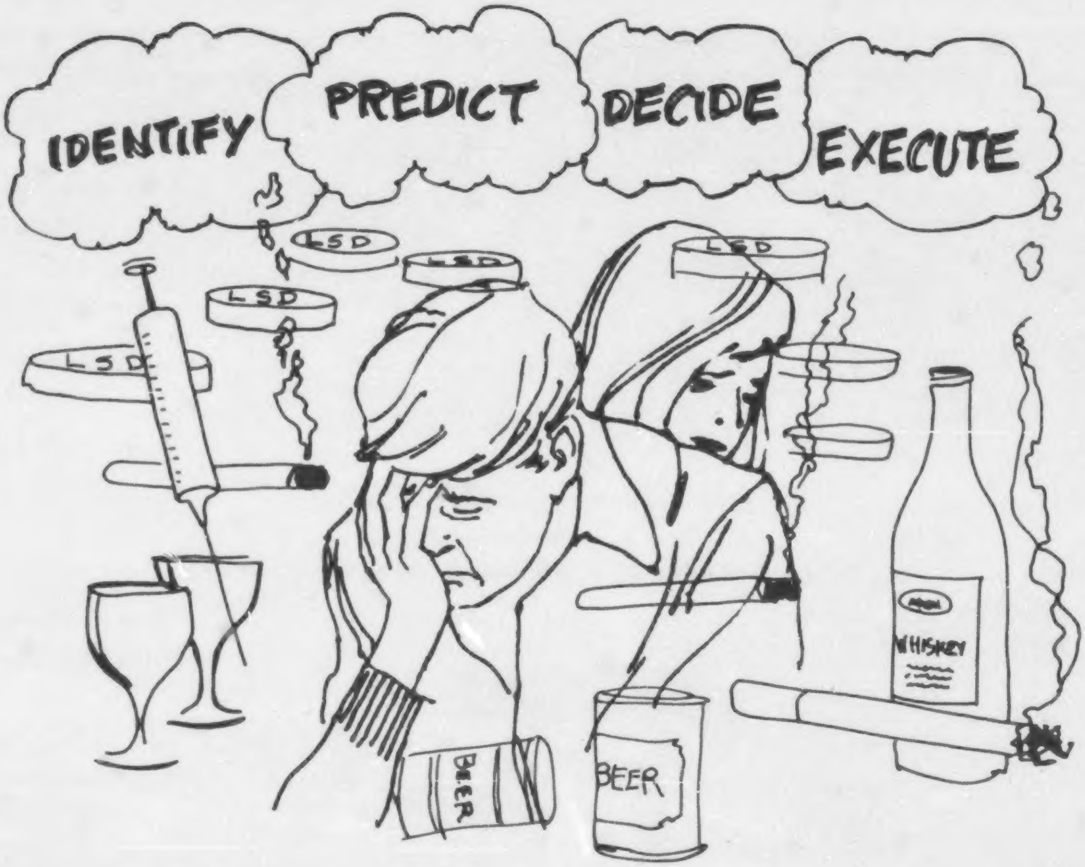
SECTION 2. READINESS TASKS

SECTION GOAL:

Students will be able to determine personal fitness and vehicle readiness for a trip, and plan a trip within the capabilities of both.

UNIT TITLES:

A. Operator Fitness
B. Vehicle Readiness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SECTION 2. READINESS TASKS

Unit A. Operator Fitness

UNIT OBJECTIVE:

Students will be able (1) to identify and appraise physical, physiological, mental and psychological factors that influence the behavior of highway users; and (2) to determine appropriate courses of action to minimize the hazard caused by these factors.

EPISODE TITLES:

1. *Alcohol*
2. *Drugs*
3. *Emotions and Motivations*
4. *Fatigue, Carbon Monoxide and Other Impairments*

UNIT A. OPERATOR FITNESS

Episode 1. Alcohol

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Absorption, Distribution and Oxidation	Describe what happens to alcohol in the body from the time it is first ingested until it is eliminated.	
1.2	Effect on Body Functions	Given a list of body functions (speech, vision, judgment, coordination, etc.) in random order, arrange them in the sequence these functions would be impared by increasing amounts of blood alcohol concentration.	
1.3	Variables	Identify (1) individual differences which determine the manner and degree with which people are influenced by alcohol and (2) the conditions which cause the same individual to be affected more at one time than another.	
1.4	Influence on Driving Performance	Describe the effects of alcohol on the human functions involved in driving (identify, predict, decide and act), in the order that these effects are likely to occur as the concentration level of alcohol increases. In addition, explain why these effects are likely to be more pronounced in young people than in adults.	
1.5	Motivations-Decision	Identify and appraise motivations that prompt young people to drink, and develop personal guidelines for behavior that will minimize the risks associated with drinking and driving.	
1.6	Accident Data	Compare the probability of problem drinkers and social drinkers being involved in highway collisions.	
1.7	Legislation and Enforcement	Assess the Kansas potential of legislation and enforcement measures for reducing alcohol induced highway accidents.	

1.1 When ingested, alcohol is directly and quickly absorbed into the bloodstream through the lining of the digestive tract, carried by the blood to all parts of the body (including the brain), and finally oxidized or eliminated.

a. The rate at which alcohol enters the blood stream through the walls of the stomach and small intestine depends upon the:
(1) rate at which alcohol is ingested;
(2) amount of alcohol involved;
(3) the characteristics and amounts of other foods and beverages also present in the stomach.

b. Alcohol is distributed in proportion to the water content of the body material. Weight of the person is a significant variable.

c. Alcohol is circulated throughout the body until it is oxidized.
(1) Oxidation is a series of chemical changes that enable food to release energy.
(2) Most oxidation takes place in the liver, which needs about 1 hour to burn up ½ ounce of pure alcohol.
(3) A small percentage (5 to 10 percent) of the alcohol is eliminated by the kidneys, breath and sweat glands.

d. How much alcohol reaches the brain at one time is determined by how much the person drinks, and how closely spaced those drinks are.

e. When the consumption of alcohol is faster than the oxidation rate, alcohol and its effects will "pile up".

f. The concentration of alcohol in the blood can be measured accurately by blood, breath or urine analysis. A rough guide for a 150-pound person is that each drink increases the concentration of alcohol in the blood by 0.02 percent.

1.2 As the alcohol concentration in the blood stream builds up, body functions are affected.

a. Alcohol operates as an anesthetic by deadening the nerve centers, and therefore is identified as a **physiological depressant**.
(1) A person may feel gay and pepped up; nevertheless, the nervous system is being **depressed**, not stimulated.
(2) Alcohol does not "step on the gas" for us (stimulant). It simply paralyzes the brakes (restraints).

b. Alcohol's paralyzing, numbing effect on the brain begins at the higher center (cerebrum) and moves toward the lower center (medulla) of activity, as the concentration of alcohol in the blood stream increases. The parts of the brain are affected in reverse order of their development.
(1) First, the forelobes (cerebrum) are affected, resulting in decreased ability to reason and make judgments, weakened social inhibitions, and changed attitudes toward others.
(2) As the concentration increases, more of the forebrain is affected and, alcohol reaches the cerebellum, which controls sensory-motor functions. The result emotional instability, retarded responses, impaired vision and uncoordination.
(3) At higher levels of concentration the person is unable to stand or walk, and then loses consciousness.

c. The effects of alcohol increase approximately as the square of the blood alcohol concentration (0.08 percent concentration is not twice as bad as 0.04 percent, but instead four times as bad).

1.3 Inherited, acquired and other factors cause differences in the manner and degree with which people are affected by alcohol.

a. Body weight, body chemistry, attitude toward drinking experience cause individual differences.

b. Fatigue, emotional state, food intake and drugs cause the same individual to be affected by alcohol more at one time than another.

c. Aspirin, black coffee, cold showers and exercise have little influence in reversing the principal effects of alcohol.

1.4 All of the capabilities required to operate a motor vehicle are particularly susceptible to the effects of alcohol (identifying, predicting, deciding and executing).

a. The driving ability of most persons becomes impaired **before** they display **outward** signs.

b. The effect of alcohol on judgment and self control, even the early stages, is particularly serious. The drinker feels more perceptive and skillful, and is likely to take more chances.

c. Reduced input of sensory data (effect on vision) plus diminished ability to identify and analyze the data (effect on reasoning center) combine to impair the driver's decision-making ability.

d. Responses are slowed and muscular coordination impaired.

e. Even though some individuals, after a few drinks, exceed the driving competence of other persons who have not consumed any alcohol, it behooves everyone to be at his optimum performance level when driving.

f. Alcohol is likely to affect driving performance of young drivers more than adults.
(1) The young person lacks experience in compensating for the effects of alcohol.
(2) The young driver skills are less automatic and more inclined to deteriorate from alcohol's effect.
(3) Risk taking, especially strong may be accentuated by alcohol.

1.5 Most young people drive and some young people drink, and the same individual will sometimes do both. What will you do?

a. Various motivations prompt people (including youth) to drink, such as:
(1) **social pressures**
(2) **self-enhancement**
(3) **curiosity and experimentation;**
(4) **desire to relax and relieve anxieties or to celebrate a special occasion; and**
(5) **family custom.**

b. The most intelligent alternative is to avoid the combination of drinking and driving, because the "gain" is not commensurate to the risk involved.

1.6 The immoderate use of alcohol is a major source of highway crashes, especially of those most violent.

a. Alcohol contributes to about half of all highway deaths (higher in single-car fatalities).

b. Alcoholics and other problem drinkers, who constitute but a small minority of the general population, account for a very large part of the overall problem

c. The social drinker is dangerous because:
(1) of sheer numbers;
(2) they are not so easy to spot and defend against;
(3) they fail to recognize their limitations.

d. The association between blood alcohol levels and pedestrian accidents very closely parallels the findings in the studies of drivers (limited evidence).

1.7 Kansas requires the applicant for a driver's license to sign a statement that he will submit to a breath test to determine intoxication when requested to do so or else surrender his license.

a. Maximum blood-alcohol concentration for Kansas is .10 percent.

b. Normally, the drinking driver is apprehended for a moving violation and then upon the ensuing investigation of driver condition is he arrested for driving under the influence of alcohol.

Episode 2. Drugs

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Drugs & Medicines	Classify specific kinds of drugs, their effects of body functions, and possible consequences for the motor vehicle operator.	
2.2	Guidelines	Formulate a set of personal guidelines for avoiding harmful highway consequences from drug misuse.	

2.1 Different drugs have different effects on body functions—all detrimental to driving performance.

a. Narcotics (morphine, cocaine and heroin) are the most powerful and dangerous form of drugs.
(1) In extreme cases, they are prescribed to relieve pain in disease, trauma and burns.
(2) They have a depressant effect on the central nervous system which produce drowsiness, inability to concentrate, impaired vision, and sluggishness, but at the same time they provide a feeling of well being.

b. Marijuana ("reefers", "pot", "loco weed"), a natural drug rolled in cigarette paper and smoked.
(1) In the early stages, the user may appear animated and hysterical, while in the later stages sleepiness and stupor result.
(2) A person who becomes dependent may experience hallucinations.
(3) Marijuana intoxication does not impair motor coordination so rapidly, but a user should not operate a car while his **concepts of time and space (depth perception) are radically distorted.**

c. Amphetamines ("bennies", "pep pills", "co-pilots") are useful in treating certain illnesses and for controlling obesity.
(1) They have a stimulating effect on the nervous system, increasing alertness and efficiency for a short time.
(2) Temporary effect may be followed by headache, dizziness, irritability, decreased ability to concentrate, and marked fatigue.
(3) Operators may see things in the road that are not really there—mirages or hallucinations.
(4) Amphetamines are sold to truck drivers and young persons to keep awake.

d. Barbiturates (sleeping pills, "goof balls", "candy", "barbs", etc.) are useful medicines to calm nervousness and produce sleep.
(1) They are habit forming.
(2) The tolerance for barbiturates varies from one person to another.
(3) Excessive use produces symptoms similar to alcoholic intoxication.

e. "Tranquilizer" identifies a group of preparations that are muscle relaxants, affecting some reflexes to relieve mental apprehension (attitude and outlook).
(1) Relatively mild compared to barbiturates but if excessive dosages are used repeatedly they can result in sedation to the point of dizziness, drowsiness and blurred vision.
(2) Those sold over the counter, such as inhalers, may have such a depreseant effect on the central nervous system that driving performance will be dangerously impaired.
(3) Particularly dangerous when used along with other drugs or alcohol (synergetic effects).

f. Antihistamines which are used for relief of nasal congestion due to colds, to combat allergies and for other purposes can also seriously impair one's ability to operate a motor vehicle.

(1) Have a depressant effect on the central nervous system.

(2) May cause side effects such as inattention, confusion and drowsiness.

(3) Effects vary from person to person and are rather unpredictable.

(4) Some preparations containing a quantity of antihistamines compounded with other substances may be sold without prescription (Contact, Dristan, etc. are examples).

g. A number of other drugs need to be used intelligently or in some cases avoided entirely.

(1) Penicillin and sulfanilamides may cause abnormal and violent reactions (Streptomycin is particularly bad).

(2) Glue sniffing produces immediate symptoms similar to those associated with alcohol intoxication, while a second stage produces drowsiness, stupor, or, in some cases, unconsciousness.

(3) LSD and other hallucinogens primarily affect the central nervous system, producing changes in mood and behavior, and upsetting the user's perception of reality (perceptual changes involve senses of sight, hearing, touch, body-image and time).

2.2 Simple analysis tells us that uncontrolled drug use can be harmful to the health of the user and make it unsafe for him to operate a motor vehicle.

a. The effect of drugs and alcohol in combination equals more than "one-plus-one", and this is true of other combinations of drugs. One drug intensifies the effects of the other in a synergetic effect.

b. Drugs, like alcohol, first affect the higher brain and nerve centers which control reason, judgment, self-control, and normal inhibitions, and as a result render the person incapable of evaluating his fitness for driving.

Episode 3. Emotions and Motivations

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Emotions & Driving Behavior	Summarize the nature and effects of emotion on motor vehicle operators.	
3.2	Handling Emotions	Formulate personal guidelines for anticipating and handling situations likely to induce strong emotions and unsafe behavior.	

3.1 Emotions (fear, love, hate, anxiety, joy, excitement) have a profound effect on behavior in general and driving in particular.

a. A single emotion is a strong feeling of one sort or another typically involving both mental and physical responses.

b. Most emotions are temporary, causing us to act the same way over and over again (temperament).

c. The mental state that the driver brings to the driving task frequently influences his performance. He may be:

(1) worried about an examination;

(2) depressed or elated about the outcome of an athletic contest;

(3) upset about an argument with a girl (boy) friend; or

(4) angry because of a restriction imposed by a parent or teacher.

d. The distracting and paralyzing effect of strong emotions, regardless of whether they originated before or during the trip, can:

(1) dim or "blind" our powers of observation;

(2) delay or distort our ability to interpret events;

(3) reduce our powers to assess and predict the actions of other highway users;

(4) produce faulty judgment and high risk decisions; and

(5) adversely affect ability to perform precise and properly timed skills.

e. Emotions are contagious and can influence others—you become angry, causing another driver to become angry, who in turn passes his anger on to someone else, setting up a chain reaction.

f. Emotions can be a positive force.

(1) Reasoned fear of an accident or legal punishment helps to restrain unsafe tendencies.

(2) Love that a person has for family and friends can motivate a person to drive safely.

g. There are no laws on controlling emotions, but laws do relate to certain behavior which results from uncontrolled emotions (speeding, failure to yield, etc.).

h. The development of the reasoning and emotional centers of the brain is a lifelong process, and young people are in the early stage of the development.

(1) Young people are inclined to be more erratic in temperament, more subject to extremes, and more likely to let their emotions drive the car.

(2) However, **emotional maturity is not necessarily related to chronological age**.

3.2 Accident potential is not related to the degree to which operators are beset by emotional problems (emotional upsets are an inevitable and natural consequence of living), but rather to the effectiveness of the methods by which they handle or cope with these problems.

a. Driving proficiency can be increased by developing the habit of evaluating our emotional fitness to drive; and

b. We can minimize the hazard potential of traffic induced frustrations by examining situations which are irritating; and

c. By empathizing with other highway users we will be more likely to tolerate their mistakes and, therefore, less likely to become irritated.

Episode 4. Fatigue, Carbon Monoxide, and Other Impairments

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
4.1	Effects of Fatigue	Predict the effects of fatigue on human functions and operator performance.	
4.2	Handling Fatigue	Formulate personal guidelines for minimizing the danger of fatigue induced accidents.	
4.3	Carbon Monoxide	Classify the (1) source of carbon monoxide, (2) effects on body functions and operator performance, (3) conditions that increase the chance of carbon monoxide poisoning, and (4) precautionary measures.	
4.4	Compensations for handicaps	Identify physical handicaps for which effective means of compensation are available (in motor vehicle operation).	
4.5	Age factors	Summarize the major points related to the question, "How valid is calendar age as an index of driving competence?" Give a list of driving violations and errors, predict which ones are more likely to be committed by elderly drivers, with a statement to support each choice.	

4.1 Fatigue causes physiological changes which result in reduced performance by the systems of the body. This, in turn, impairs the operator's ability to function effectively.

a. Effects of fatigue are generalized throughout the body, causing:
(1) narrowing of the visual field;
(2) impairment of sensory acuity;
(3) delayed and distorted perceptions (perceptual skills have been demonstrated to deteriorate more than motor skills after prolonged driving);
(4) impaired judgment and prediction;
(5) delayed decision-making and reactions; and
(6) reduced control and timing of neuromuscular skills.

b. Because of these effects a fatigued operator is more likely to:
(1) ignore or fail to recognize critical elements in the traffic environment,
(2) be affected by glare,
(3) misjudge the speed or distance of another vehicle,
(4) become irritable, discourteous and over-react to minor irritations, and,
(5) make a clumsy or impulsive action while maneuvering the vehicle.

c. Some drivers who are very tired get "foot heavy" and drive at excessive speeds without their immediate knowledge, while others slow down without realizing it.

d. Collisions involving a driver who has fallen asleep (sleeping is not always a voluntary activity) are usually characterized by no skid marks or evidence of evasive action prior to impact.

4.2 Certain measures can be used to delay the onset of fatigue.

a. Fatigue and drowsiness represents a fortunate warning to be heeded.

b. To help maintain mental alertness and avoid the onset of fatigue on long trips:
(1) be well rested when starting the trip;
(2) keep your eyes moving;
(3) wear good quality sunglasses in bright sunlight;
(4) avoid heavy foods and alcoholic beverages;
(5) keep the car well ventilated; and
(6) stop periodically for rest and light exercise.

4.3 Carbon monoxide poisoning can be prevented by using what we know about the source and nature of the poison.

a. The major source of carbon monoxide is automobile exhaust.
(1) When fuel is incompletely burned, it gives rise to carbon monoxide.
(2) An automobile engine produces enough carbon monoxide to make a closed garage deadly within five minutes.
(3) Carbon monoxide from cigarette smoking in a closed automobile can reach a dangerous level.

b. Carbon monoxide is not evident to the senses (colorless and odorless), so if the concentration is high a person might lose consciousness without any warning sign. On the other hand, the following symptoms may become apparent if the carbon-hemoglobin level builds up somewhat gradually.
(1) Tightness across the forehead followed by throbbing in the temples.
(2) Headache, weakness, dizziness, nausea, loss of muscular control and increased pulse and respiration rate.
(3) Symptoms multiply rapidly as the level increases resulting in dimness of vision, severe nausea, fainting, coma and finally death.

c. Certain weather, vehicular and driver conditions increase the chances of carbon monoxide poisoning.
(1) The danger of carbon monoxide poisoning is increased in hot humid weather.
(2) Snow around the car may "pocket" the gas and cause it to seep into the car.
(3) Poor ignition and faulty carburetor adjustment may be a factor.
(4) Loose exhaust pipe or manifold connections, a cracked exhaust manifold, a leaky muffler or tail pipe are all prime sources of trouble.

d. If certain precautionary measures are followed the danger of carbon monoxide poisoning is minimized.
(1) Keep a window partially open at all times for proper ventilation.
(2) Close air intakes temporarily when traveling in slow moving traffic or while driving through tunnels, and shut off the engine when delays cause you to stop for longer than a minute.
(3) Always keep the garage door open when the vehicle is inside and the engine is running.
(4) Never drive with the car's trunk open or with a station wagon's back glass down. Suction can bring exhaust gas into your passenger compartment.
(5) Replace muffler or tail pipe if damaged by corrosion.
(6) Children should not be placed on the car floor to sleep.

4.4 A chronic disease or impairment does not necessarily signify any serious interference with the driving function.

a. Sometimes a compensating operator performs better than expected for a non-handicapped person.
(1) proper seeing habits and well developed perceptions of potential driving hazards are highly prevalent in deaf drivers; and

(2) there is full concentration on driving with absence of radio and conversational distractions.

b. Persons with recently acquired impairments lack the compensating ability of those who have had the same impairments over a significant period of time.

c. Some remarkable achievements have occured in equipping the vehicles of orthopedically disabled persons.

4.5 Young operators can increase their own safety through an awareness and appreciation of certain traffic related realities associated with the aged driver.

a. The aging driver is a significant factor in traffic, and he will steadily become a more important factor. His numbers are growing much faster than the total number of drivers.

b. Most older drivers want to continue driving as long as they are capable of safe driving for the same reason as young drivers—independence.

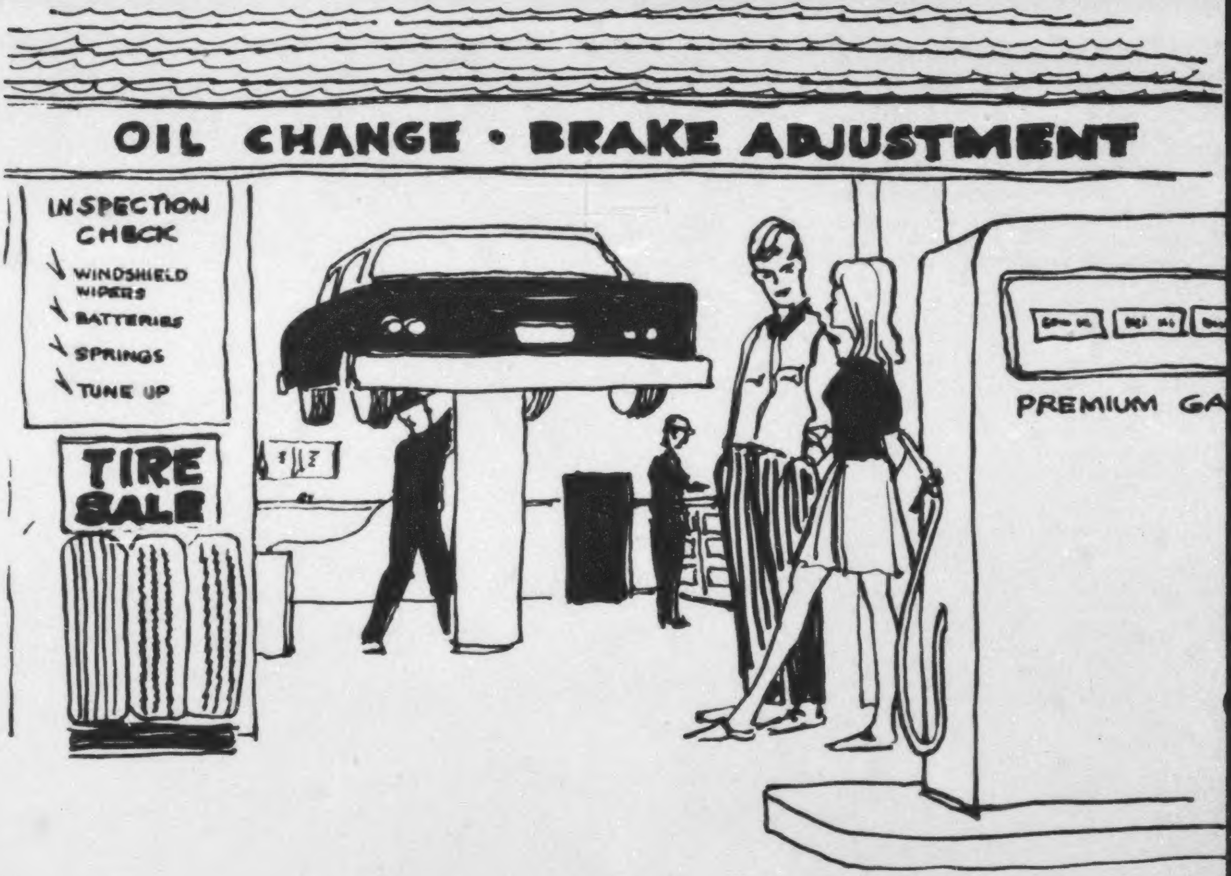
c. Chronological age is a poor index of aging and also, of driving competence.
(1) The important yardstick is not the calendar age but the functional age of the individual.

(2) Some persons can still drive safely in all types of traffic at age 80, while others might be unable to drive safely at 60, both groups of drivers having been safe drivers at 50 years of age.

d. The physiological and behavioral changes which occur as man passes through his life span impair his capability to function as a highway user; but, on the other hand, the value of added experience and safety-mindedness tend to offset the deteriorating factors.

e. Older drivers find themselves caught up in unsafe situations and accidents, caused of inefficient sensory-motor capabilities and unfamiliarity with modern highway facilities and traffic controls.

f. The deterioration process of aging is so gradual that the effects may not be recognized.


OIL CHANGE • BRAKE ADJUSTMENT
INSPECTION CHECK
WINDSHIELD WIPERS
BATTERIES
SPRINGS
TUNE UP
TIRE SALE
PREMIUM GA

SECTION 2. READINESS TASKS

Unit B. Vehicle Readiness

UNIT OBJECTIVE:

Students will be able to develop a vehicle maintenance and selection program that will facilitate optimum performance from a vehicle suitable for trip requirements.

EPISODE TITLES:

1. *Vehicle Sub-Systems—Prerequisite Knowledge*
2. *Vehicle Management—Selection and Maintenance*

UNIT B. VEHICLE READINESS

Episode 1. Vehicle Sub-System-Prerequisite Knowledge

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Power-Source & Transmission	Given a diagram of the power train, trace the power from the engine to the rear wheels describing the function of the major parts.	Classroom instruction time should be limited on this episode, since the knowledge can be acquired by independent study outside of class, assuming that the material is well-programed and illustrated. Moreover, some students will have learned about the automobile mechanism through other courses or in experiences outside of school. (The internal combustion engine is now being taught in elementary school science).
1.2	Lubricating and Cooling Systems	Summarize the important roles played by the lubricating and cooling systems in keeping the engine going.	

1.1 The burning of a gasoline-air mixture in an enclosed space (cylinder) is the source of power.

a. A fuel pump draws gasoline (potential energy) from the storage tank and delivers it to the carburetor where it is atomized and mixed with air to form a combustible vapor.

b. From the carburetor the combustible vapor is drawn into a closed (except for intake and exhaust valves) cylinder with a close fitting piston, where fuel and electrical systems combine to convert heat energy of expanding gases into mechanical energy.
(1) Vapor is compressed in the cylinder by piston action, and ignited by a spark plug. The resulting action thrusts the piston down.
(2) The downward thrust of the piston is converted into a rotary motion by the crankshaft attached to the piston.
(3) Most vehicles have four, six or eight cylinder-piston combinations, each exerting a downward thrust at a different instant. This arrangement provides a continuous and smooth production.

c. The twisting force of the crankshaft is transmitted to the rear wheels via:
(1) **clutch**—connects and disconnects the flow of power from the engine to the rear;
(2) **transmission**—speed and power changing device;
(3) **driveshaft**—transfers power from the transmission back to the differential;
(4) **universla joints**—provides a flexible joint so that power can be delivered while the differential is bounding up and down from the road shock; and
(5) **differential**—transmits the twisting force of the driveshaft to the axle shafts which are at right angles to it, and allows the rear wheels to turn at different speeds in turning corners.

d. The battery stores electricity supplying current to start the engine and to operate the accessories.

1.2 Lubricating and cooling systems are needed to keep the engine and power train functioning.

a. Motor oil from the crankcase is pumped throughout the engine to:
(1) prevent metal-to-metal contact;
(2) collect contamination; and
(3) serve as a seal between cylinder and piston walls.

b. Good oil does not wear out, but contamination can build up to dangerous proportions.

c. Some parts of the engine would quickly destroy themselves if much of the heat were not removed in a cycle of continuous cooling.

d. A fan belt turns the fan which pulls an air stream through the radiator, and it also turns the water pump which circulates the coolant through the system.

Episode 2. Vehicle Management, Selection and Maintenance

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Owner Responsibility	List reasons for properly maintaining a vehicle.	
2.2	Signs & Symptoms	Match various mechanical problems with the means of detecting the problem.	
2.3	Preventive Maintenance	List the periodic checks that should be made to maintain efficient and economical operation. Given a list of vehicle components (cooling system, battery, tires, etc.).	
2.4	Operating Conditions	State the implications these conditions have for a vehicle maintenance schedule. Given various operating conditions.	
2.5	Choosing a Service Agency	Formulate criteria and guidelines for selecting and dealing with a service agency.	

2.1 Each owner must assume responsibility for the maintenance of his vehicle; furthermore, it is to his advantage to do so.

a. Letting your vehicle deteriorate can lead to:
(1) poor performance,
(2) breakdowns on the road,
(3) accidents,
(4) excessive repair bills,
(5) less mileage per gallon of gasoline or quart of oil,
(6) conviction for a traffic violation, and
(7) lower resale value.

2.2 Vehicles seldom develop mechanical problems without giving some warning sign. Early identification and correction of these symptoms is important, just as it is with the human body.

a. The better you understand how vehicles work, the easier it will be to recognize the first signs of trouble and describe them accurately to a mechanic.

b. Vehicle malfunctions can be detected by an abnormal "feel" in the control devices, by abnormal sounds and odors, and sometimes by visual means.
(1) Engine troubles can be determined by the way in which the engine starts, idles, accelerates at various speeds or sounds; by excessive oil consumption, and by the color of exhaust smoke—black or blue smoke usually signifies the need for carburetor adjustment or engine overhaul.

(2) Troubles related to engine temperature, oil pressure, battery charging can be observed on the warning lights or gauges.

(3) Battery failure may come rather suddenly, resulting in the inability to start the engine.

(4) The way the brake pedal feels (soft or spongy, hard pressure required, falls away under foot pressure), sounds.

(5) Problems in the steering and suspension system are usually revealed through the steering wheel ("shimmy", free-play, pull to one side, hard steering, poor return from turns and temporary loss of power assist).

(6) Uneven or excessive tire wear may also indicate a need for correction in tire pressure or in driving habits.

(7) Some other signs signifying a problem that needs attention are oil or water leaks, poor gasoline and oil mileage, dim lights and irregular flashing of the turn signal.

2.3 To increase the safety and efficiency of an automobile, drivers should see that the following are checked periodically by themselves or a service station attendant.

a. **Cooling system**—coolant level and condition; radiator hose (hoses have a limited lifetime due to water and heat); and radiator grill for dirt, leaves and insects.

b. **Battery**—electrolyte level; external condition of battery, and cables for damage, cracks warped case and corrosion (remove corrosion with soda solution and apply petroleum jelly on the post and cables to prevent further corrosion).

c. **Tires, steering, and suspension systems**—tire pressure (test and inflate when cold); condition of tires (wear, cuts and cracks).

d. **Brake system.**

e. **Oil level and oil filters**—correct oil level is at the FULL mark on the dip stick or slightly below; oil filter must be removed to see if dirt and sludge is present around the base of the refills.

2.4 The kind of operating conditions make a difference in the need for vehicle maintenance.

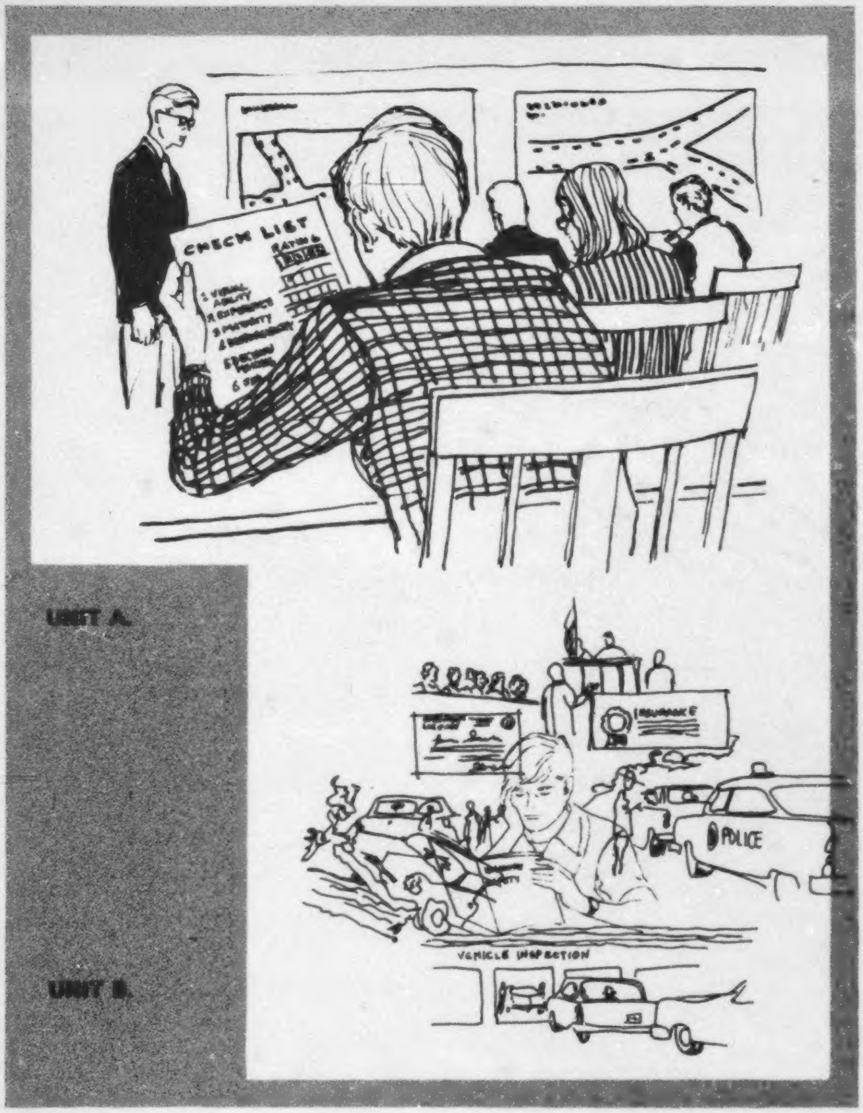
a. Oil changes should be more frequent in colder weather, dusty climates and short-trip driving.

b. Tires are more likely to go flat in hot weather.

c. Freeway driving is a severe test for any potentially weak points in the mechanism of a vehicle (tires, fan belt, etc.).

d. Certain driving practices are costly in terms of gasoline consumption, wear of tires and damage to the car:
(1) Excessive speed,
(2) quick starts and stops,
(3) turning too fast,
(4) racing the engine,
(5) improper gear selection,
(6) striking curbs, "chuck-holes", and obstructions and
(7) Misuse of clutch (manual transmission).

2.5 A most important factor in your vehicle maintenance program is to choose a reliable service agency with reliable mechanics; otherwise, you are going to spend money for repairs that are not needed or are not properly done.


CHECK LIST
UNIT A.
INSURANCE
POLICE
VEHICLE INSPECTION
UNIT B.

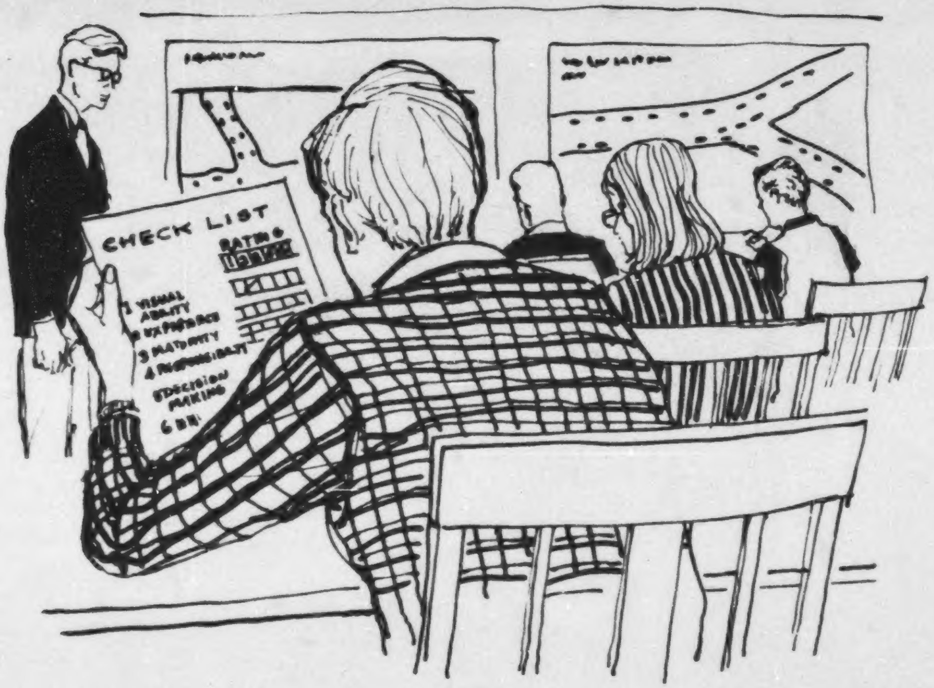
SECTION 3. IMPROVEMENT TASKS

SECTION GOAL:

Students will be prepared to identify and accept opportunities directed toward (1) improving their competencies as a highway user and (2) supporting efforts to improve the highway transportation system.

UNIT TITLES:

- *A. Self-Improvement*
- *B. System Improvement*


CHECK LIST
RATING
1 VISUAL ABILITY
2 EXPERIENCE
3 MATURITY
4 RESPONSIBILITY
5 DECISION MAKING
6

SECTION 3. IMPROVEMENT TASKS

Unit A. Self-Improvement

UNIT OBJECTIVES:

Students will be able to (1) realistically assess their present capabilities to function as highway users, (2) appropriately compensate for their shortcomings, and (3) move toward excellence through a continuing self-evaluation and learning process.

EPISODE TITLES:

1. *Risk Acceptance*

UNIT A. SELF-IMPROVEMENT
Episode 1. Risk Acceptance

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Risk Assessment	Identify and appraise the factors that motor vehicle operators (particularly youth) consider when assessing risks on the highway.	The basic concepts in this episode are likely to take on meaning if the teacher and students engage in a series of questions such as:
1.2	Individual Differences	Describe the reasons for individual differences in risk acceptance.	What are some major kinds of risks that vehicle operators take? During the last week what are some of the risks that you saw other people-parents or friends-take while driving? In each example, what did the operator stand to gain (advantage) of the alternative possibility? What about the potential loss in either the risky or less situation?
1.3	Group Influence	Identify group influence on individual behavior and suggest alternative responses that would have been more appropriate. (Safer and no loss of status within the group). The same objective could be applied with students using situations from their own experience.	
1.4	Other Influences	Predict the level of risk to be expected as a result of the operator's condition. Given a description of the physical and mental condition of a vehicle operator.	Does a vehicle operator always select the same alternative when confronted by the same situation? If not, what factors cause him to reach a different decision? Have you observed any examples in recent weeks to illustrate your previous answer? What controls are you going to impose on yourself to help you select appropriate responses consistently?

1.1 Risk acceptance is influenced by our evaluation of the risk compared to the potential gain of assuming the risk. What is at stake, and what are the odds?

a. Sometimes risks are taken in order to:
(1) save time;
(2) gain status;
(3) experience a thrill;
(4) satisfy our ego; and
(5) punish ourself and others.

b. Operator decisions typically balance a high probability of disastrous loss.
(1) To gain a few seconds in time, an operator will risk a dangerous passing maneuver.
(2) Because other ingredients needed to cause a collision were not present, operators are frequently successful in realizing small "gains" from accepting traffic risks, compared to a very low "failure" rate evidenced by collision involvement. (This tends to build up a false sense of immunity).
(3) Few operators are cognizant of the insignificant total time saved.
(4) Risks are an inevitable part of living, but the irresponsible person takes unnecessary risks when there is little if anything to gain.

1.2 Some operators have a higher tolerance to risk than others.

a. An operator's personal-social needs and his values, which are not always compatible with safety, have a strong influence on risk acceptance.

b. Operators may have a greatly distorted concept of risk due to faulty analysis and prediction of the traffic scene. This is especially true with young drivers whose driving experience is limited.

c. Younger drivers are inclined to take more risks than older drivers.

d. Risk acceptance of men seems to be higher than it is for women.

1.3 The desire for status and security within a preferred group has a strong influence on risk acceptance.

a. Young people, especially, sometimes use an automobile to gain social acceptance (man needs to belong to a group, to be accepted by others).

b. The popularity of reckless conduct among some adolescent groups stems partially from their need to rebel against the authority of parents and teachers.

c. Girls can influence the driving behavior of boys. The reverse is also true.

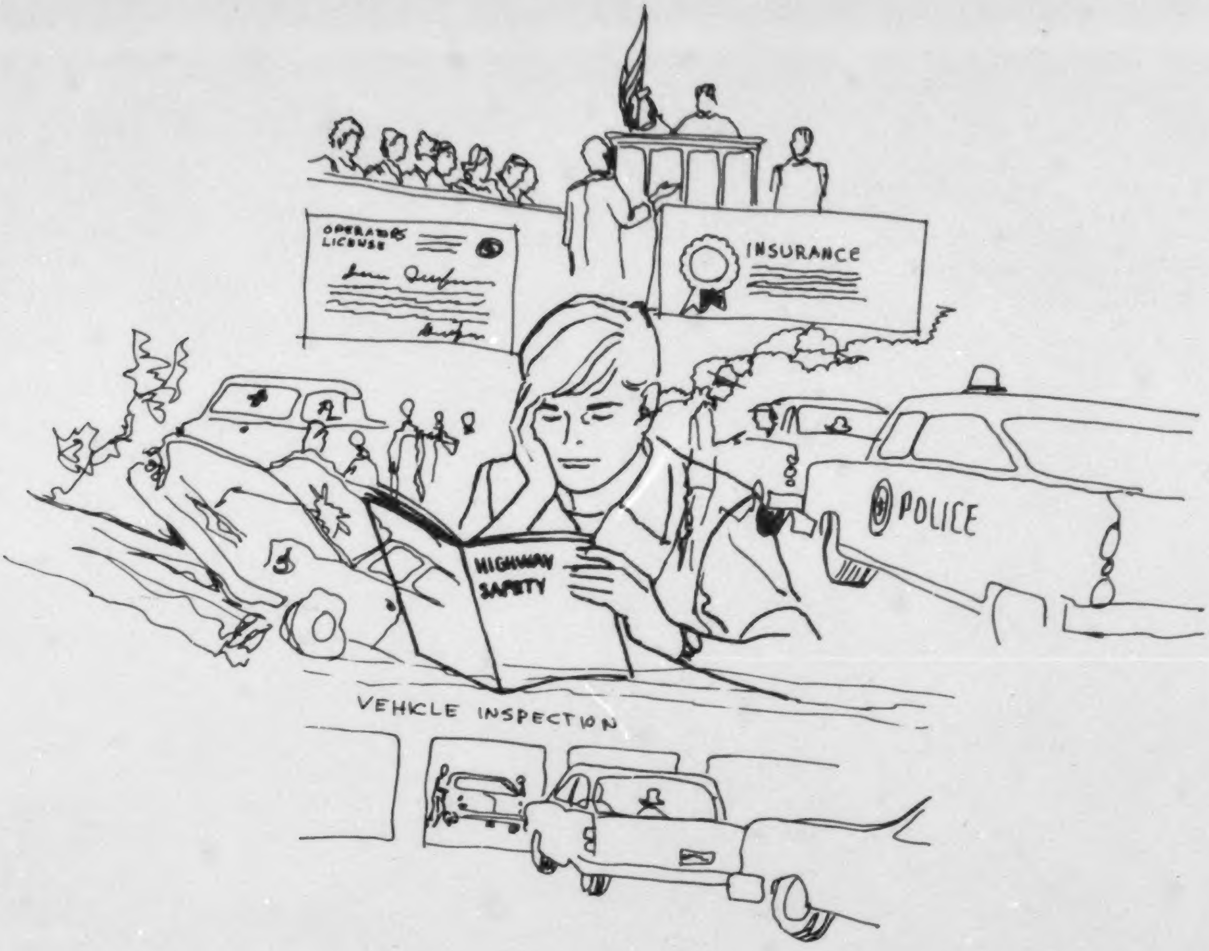
1.4 The same operator may be willing to assume more risk at one time than another. Our driving behavior, in general, fluctuates on a continuum from safe to unsafe behavior.

a. Although risk is inescapable in driving, the operator is usually able to determine the degree of risk that he will accept.

b. Risk acceptance may be affected by hurry, emotional state, physical condition, passengers, trip purpose, alcohol, distraction and other influences. We need to identify and correct for these transitory conditions.

c. Reason tends to abandon the hopelessly hurried and frustrated person so that "poor" risks seem highly acceptable.

d. A person might accept unusual risk in preference to the certainty of getting "bawled out" by a coach, parent or girl friends for being late.


OPERATOR'S LICENSE
INSURANCE
HIGHWAY SAFETY
POLICE
VEHICLE INSPECTION

SECTION 3. IMPROVEMENT TASKS

Unit B. System Improvement

UNIT OBJECTIVES:

Students will be capable of identifying their role, and assuming their responsibilities in a constructive manner, as they relate to traffic law enforcement, traffic engineering and other forces that dominate the highway transportation system.

EPISODE TITLES:

1. *Traffic Law Enforcement*
2. *Traffic Engineering*

UNIT B. SYSTEM IMPROVEMENT
Episode 1. Traffic Law Enforcement

Seq	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Kinds of Traffic Laws	Define the different kinds of traffic laws and describe their purposes.	Questions: Why do we have traffic laws? What different kinds of traffic laws do we have and for what purposes? Which laws do I need to know now? Under what future conditions will I need to know other traffic laws?
1.2	Quality Enforcement	Given description of traffic laws and general enforcement measures in a community; identify the strengths and weaknesses of the program.	Questions: What characteristics must traffic law enforcement include if observance is to be widespread? How should we react to unreasonable traffic laws?
1.3	Police Traffic Supervision	Describe the functions of traffic police.	Questions: What duties have you seen traffic police perform? What equipment and training do they need to perform these duties? How do you feel about police using unmarked cars and radar to catch speeders? Resource person: A police officer discusses his duties, experiences, and feelings.
1.4	Traffic Courts	Given a case description of a traffic violator appearing in court, evaluate the characteristics of the court and the behavior of the participants.	Field trip: A small group of students visit a traffic court session and report their findings to the class. Role playing: 1. Dramatize a traffic court session with students playing the roles of judge, violator, clerk, police officer and witnesses. The rest of the class serves as a jury. 2. A violator at the Violations' Bureau complaining about a $6.00 ticket. Class analyzes the attitudes of the violator.

1.1 Traffic laws cover many subjects.

a. Certificate of title and registration of vehicles laws serve as a proof of ownership, and, in addition:
(1) protect you from purchasing a stolen vehicle;
(2) aid enforcement officials in recovering stolen vehicles; and
(3) help the police to locate you in an emergency.

b. Financial responsibility laws help to protect the public from the uninsured motorist.

c. Civil liability laws govern the civil rights of one party to collect damages from another party in the event of a collision.

d. Laws regarding accidents and accident reports specify the responsibilities of persons involved in accidents in order to minimize the consequences and to furnish data for proper settlement.

e. Vehicle equipment and inspection laws aim to prevent drivers from operating a vehicle on public highways which is in such unsafe condition as to endanger any person.

f. Driver licensing laws help toward insuring that only persons physically and mentally qualified may drive, and prevent unjustified denial of the privilege to drive.

g. Rules of the road establish specifications for conventional behavior so that highway users have some basis for predicting each other's behavior.
(1) These rules of social conduct cover (a) obedience to and effect of traffic laws; (b) traffic signs, signals and markings; (c) overtaking and passing; (d) right-of-way; (e) pedestrian's right-of-ways and duties; (f) starting, stopping and turning; (g) speed restrictions; (h) serious traffic offenses; (i) stopping, standing and parking; (j) operation of motorcycles, bicycles and play vehicles; and (k) miscellaneous rules.
(2) Rules of the road represent artibrary standards of conduct which do not provide for variations in individual differences.

1.2 Good traffic law enforcement, like any other kind of good government, depends upon the acceptance of responsibility by both officials and citizens.

a. It is each individual's job to evaluate and support good law enforcement in his community and elsewhere.

b. The deterrent aspect of traffic law enforcement will be effective to the degree that highway users:
(1) understand the laws;
(2) believe in the reasonableness of the laws (unreasonable laws are an obstacle to traffic movement and in addition breed disrespect);
(3) believe in the likelihood of being detected and apprehended if they violate; and
(4) believe in the certainty and adequacy of the penalty which will result.

c. We are under the eye of enforcement for a relatively small percentage of the time we are on the highway; therefore, our own desire and conscience is the most practical policeman. This means accepting and adopting certain disciplines and practices which we perform as a matter of our own compulsion.

1.3 The role of police traffic supervision in highway safety is the same as in other phases of law enforcement; the protection of life and property and the preservation of order.

a. Traffic police accomplish this mission through:
(1) enforcement of traffic laws—to protect the highway user from his own unlawful behavior and that of others;
(2) investigation of traffic accidents; and
(3) the direction and control of traffic (at busy intersections, sports events and other special occasions).

b. In addition, they provide a variety of services designed to facilitate the safe and efficient movement of traffic.
(1) A portion of the traffic officer's time is spent in servicing and assisting the motorist who has a flat tire, empty gasoline tank, and other troubles.
(2) As voluntary compliance with the legal requirements of driving increases, the need for police traffic supervision decreases, so police officers encourage compliance by informing highway users of laws, hazards and consequences of illegal acts (press, radio, television, schools, etc.).

1.4 The distinctive function of traffic courts is to give fair and impartial justice to those arrested for traffic violations, but, like the police, their broad objective is to deter drivers from violating the law and to encourage voluntary compliance.

a. Unfortunately many people think that a judge's only function in a traffic case is to punish the violator. But a more important function is to improve drivers by helping them to understand the logic for traffic laws and convincing them to comply, as a means of making our streets and highways safer (corrective penalization).

b. Traffic court judges are in a unique position to educate and correct the behavior of highway users.
(1) At the beginning of the traffic court session, many judges present a brief talk designed to inform violators on the causes and the prevention of traffic accidents, with particular emphasis on individual responsibility.
(2) The competent judge also helps the alleged violator to see the unsafe and unintelligent aspects of his individual violation.
(3) When it appears to the court that a violator might benefit from a formal educational experience, the violator may be assigned to attend a driver improvement school.

Episode 2. Traffic Engineering

Seg	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Traffic Engineering Function	Define traffic engineering and classify the functions performed by traffic engineers.	Teacher-led (or traffic engineer) discussion following a reading assignment. Students classify examples from their community to illustrate the traffic engineers "handiwork".
2.2	Turbulence m	Classify the factors which cause turbulence in traffic movement.	Students observe traffic movement at a peak period and classify the factors which impede traffic flow.
2.3	Uniformity	Describe traffic situations where lack of uniformity in a sign, signal or road marking could cause driver confusion.	Students present examples of "lack of uniformity" in signs, signals and markings which they have observed and how highway users were, or could have been affected. affected.
2.4	"Tools"	Giv[illegible] spot map, collision diagrams, flow maps and other "tools" used by traffic engineers, interpret these devices by answering correctly a series of questions about them.	Teacher-led analysis of spot maps, collision diagrams, flow maps, speed charts and before and after accident records. Student committees, working closely with the local traffic engineer, conduct intersection studies and prepare a report which includes (1) condition, collision and flow map diagrams (2) a written explanation of their findings and (3) proposed recommendations.

2.1 Traffic engineering—a specialized branch of engineering—deals with the planning, geometric design and operations of streets and highways as their use is related to safe, convenient and economical transportation of persons and goods.

2.2 Turbulence in the traffic stream (stops, starts, changes of speed and direction) reduces street capacity and is one of the most important single causes of vehicle-to-vehicle accidents.

a. Unnecessary traffic signals, signs, parking and other conditions which disturb the smooth flow of traffic should be eliminated.

b. Differences in speed cause vehicle-to-vehicle friction, which justifies the use of minimum as well as maximum limits.

2.3 National uniformity of signs, signals and markings is essential if we are to reduce confusion, and increase voluntary obedience, on the part of the motorists.

2.4 Tools used by traffic engineers for studying and evaluating high accident locations are:

a. **spot maps**—furnish a quick visual index to concentrations of accidents which warrant detailed analysis;

b. **collision diagrams**—show the approximate paths and movement patterns of vehicles and pedestrians involved in collisions;

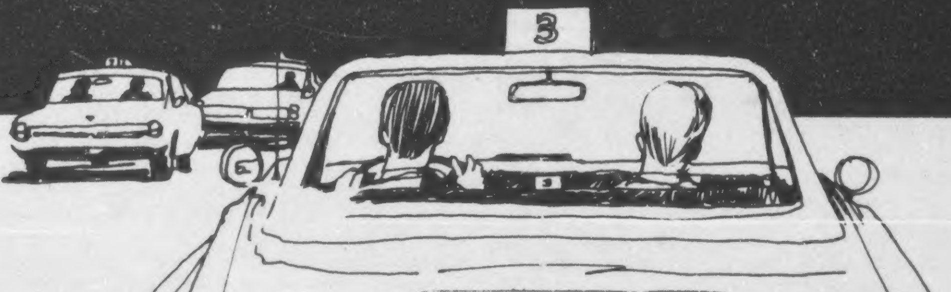
c. **condition diagrams**—a scale drawing of the important physical conditions at a location to be studied;

d. **flow map**—indicates the volume and direction of traffic;

e. **speed chart**—shows the speed of vehicles approaching the hazardous location;

f. **before-and-after accident records**—furnish a means for evaluating the effectiveness of changes made;

g. **electronic data processing**—use of computers to analyze accident data and link data with highway, vehicle and driver information.


3
CENTRAL HIGH SCHOOL
DRIVER EDUCATION CAR
STUDENT DRIVER

Part 3. In-Car Instruction

The law requires each student to complete a minimum of six clock-hours of practice driving instruction or its equivalent. At least one but not more than three student observers must be in the car during practice driving on public streets. At least one hour of observation time is required for each hour of practice driving.

A. INTRODUCTION

The primary purpose of in-car instruction is to help students develop further understanding of concepts taught in the classroom. It is the laboratory phase of the driver and traffic safety education course that is a valuable aid in the formation of desirable attitudes and sound driving habits. Practice driving lessons enable the teacher to teach a variety of manipulative and perceptual skills and provide him with information related to the learner's intellectual, social and emotional traits. During this phase of instruction, the student frequently reveals strengths and limitations that the teacher would have difficulty discovering in the classroom.

Since learning to operate a motor vehicle is much the same as acquiring any other physical skill, it is essential that the students develop the accepted, correct techniques and practice them until they become automatic reflexes. Proper techniques increase efficiency in driving; imporper techniques cause a person to become a hazardous driver.

The wide scope of objectives and the limited instructional time per student demand an extremely efficient learning situation requiring the teaching of multiple skills in any given instructional period. This requires a high degree of teaching ability with emphasis on exacting instruction. Effective teaching of the basic skills needed to maneuver the vehicle safely will give the teacher opportunities to expose his students to varied driving experience and more situations involving advanced traffic skills.

B. ADMINISTRATION

Minimum time for the in-car phase of instruction is six hours. However, every effort should be made to provide as much supervised driving experience as possible beyond this time limitation, for it is during the latter part of the learning experience that permanent driving habits and attitudes begin to take form.

Since the Kansas Driver Education Certificate cannot be issued until the approved course is completed, laboratory instruction should not be completed before completion of classroom instruction. To be most effective both completion dates should coincide as closely as possible.

Laboratory instruction shall not begin until such times as the student possesses the basic information required for safe operation of a vehicle in traffic. Each student must have in his possession a valid instruction permit, issued by the Division of Vehicles, when engaged in car instruction. Practice driving may begin with the temporary instruction permit (receipt).

Not more than four, nor less than two students should occupy the driver education vehicle with the instructor at one time. If at all possible, only three students should be assigned to each vehicle in operation during a given period. Each student should have an opportunity to drive during every instructional period. Short, frequent periods of instruction are more effective than long, infrequent sessions, i.e. if two students are in the car for a two-hour session, have them alternate half-hour driving periods. Although beginning students require more guidance during the early phases of instruction, they should be given more opportunity to perform on their own as their proficiency increases.

Groups should be compatible if at all possible so that the students are ready for new experiences as a unit. Since learners do not progress at the same rate, teacher attentiveness and thoughtful planning are essential elements in the effective presentation of each lesson. Students must be allowed to progress at their own pace as determined by their experience and aptitude.

Clear, concise and consistent terminology should be used throughout the course since the lack of communication between the teacher and students can cause delays or possibly a hazardous situation. Verbal instruction should be brief and concise, utilizing a form of "cue word" system. The instructor should avoid talking too much or demonstrating too long, since this decreases the extent of student participation and practice. The students should be encouraged to listen to explanations and observe demonstrations thoughtfully so that they understand the "how" and "why" of performing each driving operation.

During the early stages of teaching each new skill, errors will be minimized if the teacher "talks through" the steps as the student executes them, but this practice should be discontinued as soon as possible. It is recommended that students be encouraged to analyze and correct their own mistakes wherever possible. However, it is imperative that the teacher correct all serious errors immediately so that correct habits may be formed. The students must realize that the mistakes which are understood and corrected are a valuable part of learning process.

Teachers are encouraged to check the health record of students for any serious physical or psychological condition that could interfere with the ability to operate a motor vehicle. Competent medical or psychological advice should be obtained and filed when warranted. A medical examination is advised for those students for whom the school does not have health records available.

C. SELECTION OF PRACTICE DRIVING AREAS AND ROUTES

If at all possible, distractions should be avoided when the basic skills are being demonstrated and practiced. A restricted area, such as a parking lot or a straight street away from traffic, should be used during the early phases of instruction in order to facilitate the learning process and insure proper safeguards. It is very important that students master basic skills under favorable conditions before they are exposed to actual traffic situations.

The first lessons in the dual-control car will need to be conducted as efficiently as possible in order that basic skills can be learned quickly and effectively. Then, more time can be made available for perceptual and problem-solving exercises. Early lessons will need to be conducted on level streets with a minimum of traffic. Left turns should be scheduled before right turns. As students progress, the practice areas should include arterial streets and highways with an increasing amount of traffic and hazardous situations.

When the basic operational tasks become semiautomatic so that students no longer have to formulate the acts in the mind, then attention is freed for perception of the overall traffic picture. Routes can then be chosen for as many different situations and varied experiences as practical. An analysis should be made of the many local hazardous situations to determine the common elements that are present. This makes it possible to work for general patterns of behavior so that transfer to similar situations will take place in the future. Judgment and the organization of perception depends to a great extent on previous experiences.

The attitude of the pupil towards the program can be influenced greatly by the selection of streets for practice driving. Special care should be taken so that the streets or highways selected are suited to the learner's ability. The normal flow of traffic should not be hindered nor should the safety of others be questioned by local citizens.

The amount of time for on-street practice is usually quite limited, especially when the multiple-car or simulation methods are used. Therefore, careful lesson planning and route selection are extremely important.

D. EFFECTIVE USE OF OBSERVATION TIME

Making effective use of observation time has been a problem for many teachers of driver education. It is common knowledge that much useful observation time is wasted in meaningless conversation, daydreaming, and other diversion. It is also known that observation time can and should be utilized as a learning experience by motivating students in the car to observe such things as traffic controls, road conditions, incorrect driving procedures, and instructor directions in relation to the highway transportation system.

At the beginning of laboratory instruction in the dual-control car, students should underatand that back-seat time is observation time, and that all students are responsible for instructions given the practice driver. After the first two lessons, an informal and permissive atmosphere should be maintained so that full student participation can be elicited. By scrutinizing the student driver's responses and habits as well as those of other road users, students will sharpen their own perceptual and judgmental abilities. Timely questions by the teacher will cultivate these habits as well as help students note the traffic safety efforts of problems of the various official agencies.

Observation check lists on which student observers may note or rate significant aspects of the driving performance, should be developed and used intermittently. Judicious use of these can aid in student progress and teacher evaluation. Such check lists usually consist of items that have to do with correct operational procedures and performance skills. They can serve as a learning tool for both the observer and the observed.

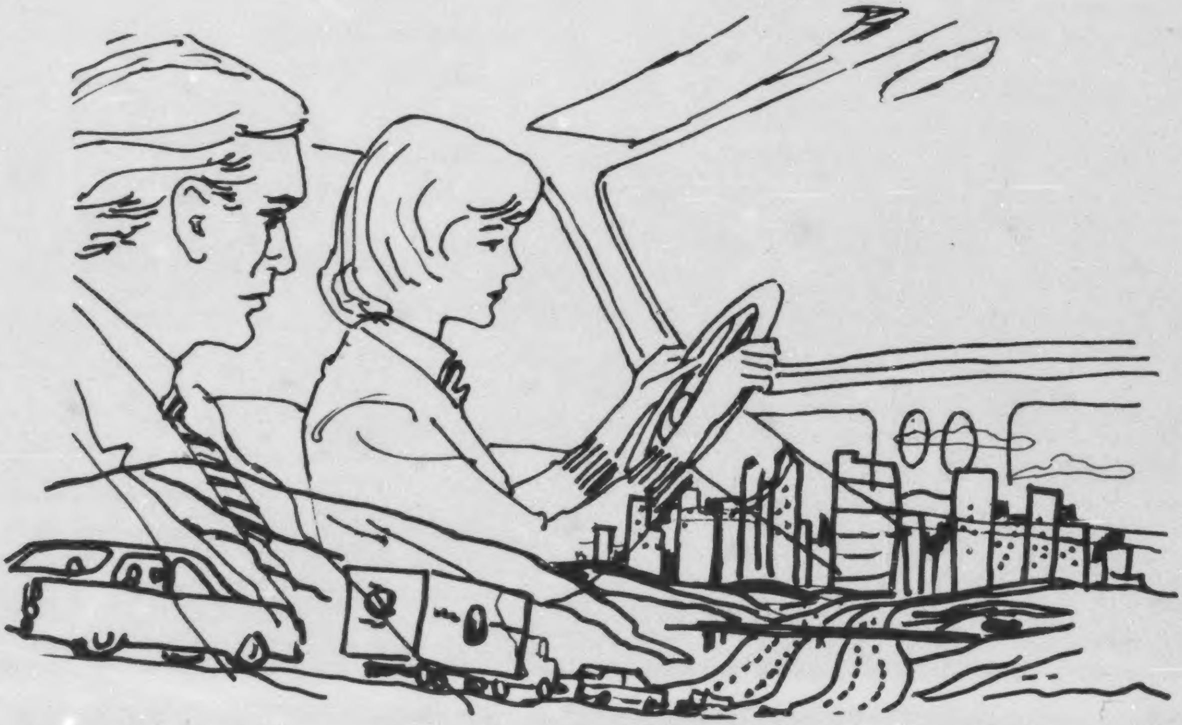
Another observation form can be developed which provides exercises for the use of perceptual and judgmental abilities. This form which serves as a "Student Hazardous Events Record", consists of a sheet divided into three columns with space for the student to record a brief description of the (1) event observed, and (2) evaluation or interpretation, and the (3) planned action.

The instructor may wish to take a few minutes of the laboratory period to discues these observations with the students. Situations or problems that cannot be effectively discussed in the car can be noted and considered as a basis for discussion in a special conference or in the clasroom. This will help tie together the classroom and laboratory instruction.

E. PROGRAM OUTLINES FOR IN-CAR INSTRUCTION

The following sequence of skill lessons is designed to expose students to a wide variety of driving experiences. They are intended to serve as a guide and need not be adhered to strictly, since local situations and individual needs of students should be the basis of lesson presentations. All instruction should be based on the vehicle at hand with reference to proper procedures in a standard or automatic transmission car. To eliminate repetition, automatic and standard transmission cars are not given separate treatment.

SECTION	TOPIC
1	Pre-driving Introduction
2	Basic Driving Procedures
3	Backing
4	Turns
5	Residential and Light Traffic Driving Tips
6	Lane Changing
7	Panic Stop
8	Adverse Conditions
9A	Reverse Turnabout
9B	Backing from Alley or Driveway to the Right
9C	Backing from Alley or Driveway to the Left
9D	Three-Point Turnabout
10	Starting on an Upgrade
11	Parking on Hills
12	Diagonal Parking
13	Parallel Parking
14	City Driving
15	Rural Road and Highway Driving
16	Gravel Roads
17	Stalled Engine
18	Passing
19	Passing Gear
20	Slow (or Stop) and Swerve to Avoid Collision
21	Right Wheels Onto Road Shoulder
22	Tire Blowout
23	Brake Loss
24	Skids
25	Getting Unstuck
26	Expressways
27	Steep Hills
28	Final Driving Evaluation



This driving guide provides procedural directives for the basic maneuvers and situations in driving an automatic shift automobile.

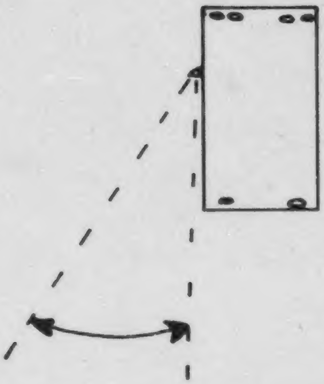
A sound car and a prepared driver are essentials to driving success.

SECTION 1. PRE-DRIVING INTRODUCTION

A. Introduce purposes and functions of

1. Door locks
2. Seat adjustment
3. Seat belts
4. Mirrors
5. Sun visors
6. Gauges
7. Gear shift lever
8. Signal lever
9. Light switches
10. Windshield wipers-washers
11. Heater-ventilation
12. Ignition switch
13. Parking brake
14. Steering
15. Foot brake
16. Accelerator

B. Special adjustment for outside mirror allows for better view in left "blind spot."



Practice Area:

SECTION 2. BASIC DRIVING PROCEDURES

As a matter of safety and consistency these steps should be followed exactly as printed.

A. Set Up

1. All clear around car? All glass clean?
2. Enter from curb side (in traffic)
3. Lock doors
4. Key in switch
5. Adjust seat
6. Fasten safety restraints
7. Adjust mirrors and windows

B. Start Engine

1. Parking brake set?
2. "P" gear
3. Right foot press gas and release it
4. Right foot cover brake
5. Key turned to start—remove hand
6. Gauges—are systems OK?

Practice Area: Demonstrate and drive

C. Get Under Way

1. Right foot pressing brake
2. "D" gear
3. Parking brake released
4. Mirrors—look for traffic
5. Turn signal on
6. Look back over shoulder
7. Foot brake released
8. Accelerate

D. Stop and Park at Curb

1. Are you in proper lane?
2. Mirrors—look for traffic
3. Turn signal
4. Release gas pedal pressure
5. Brake—right foot—easy but steady pressure
6. Move to curb and stop car
7. Shift to "P"
8. Parking brake set
9. Key off and remove it
10. Release seat belt and shoulder restraints
11. Exit and lock car properly

SECTION 3. BACKING

Know it is clear behind the car before getting into it. Do not use mirrors for backing—look behind you!

A. Backing in a straight line (restraints do not need to be fastened)

1. Right foot on brake
2. "R" gear
3. Release parking brake
4. Left hand at top of steering wheel
5. Right arm on back of front seat
6. Look over right shoulder
7. Speed control is often in foot brake pressure
8. Slight steering movements may be done with the left hand by moving the wheel while maintaining the same hand-to-wheel contact point

B. Other backing (you will do this kind of backing mostly in later lessons)

1. Hand-over-hand turning technique
2. Backing right? Then look primarily right
3. Backing left? Then look primarily left

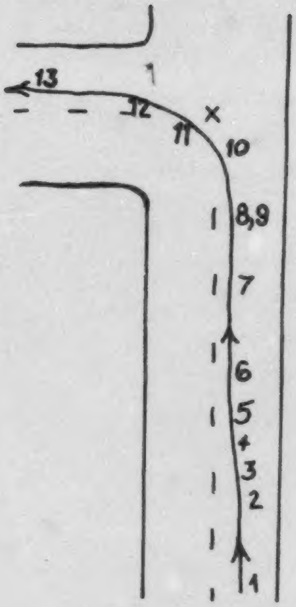
Practice Area:

SECTION 4. TURNS

Physiologically it is easier to learn left turns before right turns.

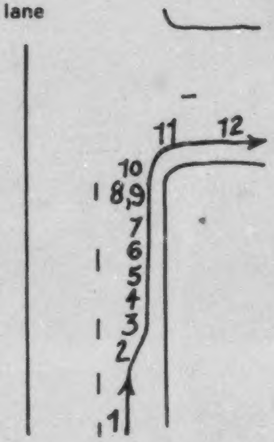
A. Left Turn

1. Planned turn legal?
2. Proper lane and lane position
3. Signal—100′ minimum
4. Mirror check (both mirrors)
5. Off gas
6. Brake (before turn, not in it)
7. Look—left, right, ahead, left
8. Hand-over-hand turning; begin where corner begins, bearing left of center point of the intersection where possible
9. Yield to cars and people; off brake
10. Watch for cars overtaking you on the left
11. Eyes aimed out left window at beginning of turn
12. Straighten out by hand-over-hand steering
13. Look well ahead in your lane



B. Right Turn

1. Planned turn legal?
2. Proper lane and lane position
3. Signal—100′ minimum
4. Mirror (inside mirror)
5. Off gas
6. Brake (before turn)
7. Look—ahead, left, right
8. Hand-over-hand turning begun where corner begins
9. Yield to cars and people
10. Off brake
11. Eyes aimed up street
12. Hand-over-hand steering and press gas gently
13. Look well ahead in your lane



Practice Area:

SECTION 5. RESIDENTIAL AND LIGHT TRAFFIC DRIVING TIPS

1. Check mirrors before corners, mik-block, and whenever slowing or stopping or realizing the possible need to do so; check more often when being followed closely.

2. Remember to:
a. Aim high in steering—at least one block ahead.
b. Keep your eyes moving—every two seconds; mirror every five seconds.
c. Get the big picture—ahead, behind, sides.
d. Make certain others see you—car position, lights, horn.
e. Leave yourself an out—stopping room, a swerving path.

3. Cover foot brake in potentially hazardous situations.

4. Glance, **do not stare**, for traffic at intersections—blind corners demand low, low approach speeds.

5. Obey pavements markings

6. Downgrades—brake early—sometimes you will want to shift to a lower gear, too, for the benefit of "engine drag".

7. When leaving alleys with crosswalks, stop. If vision is blocked you must honk your horn before proceeding.

8. Pedestrians:
a. Yield to them whenever in doubt
b. Watch between cars
c. Watch for pedestrians' feet appearing beneath parked cars
d. Playgrounds demand extra attention

9. Observe signs for rapidly changing conditions.

10. At night and during adverse weather SLOW DOWN.

11. Parked cars may move; some clues:
a. exhaust
b. driver in car
c. signal on
d. brake lights on
e. back-up lights on
f. front wheels turned out

12. Driver may leave parked car; some clues:
a. driver in car
b. door ajar
c. car just parked
d. exhaust stopped
e. brake lights or back-up lights just went off

Practice Area:

SECTION 6. LANE CHANGING

A. Change to Left Lane

1. Inside mirror

2. Outside mirror

3. Signal left

*4. Glance to side over left shoulder

5. Move over easily (do not slow)

6. Cancel signal after straightening out

B. Change to Right Lane

1. Inside mirror

2. Signal right

*3. Glance back over **right** shoulder to rear

4. Move easily (do not slow)

5. Cancel signal after straightening out

* Look to rear slightly and do not stare.

Practice Area:

SECTION 7. PANIC STOP

To stop as fast at possible when steering, control is unimportant.

1. Slam the brake pedal down hard all the way.

2. Keep it held down until you are completely stopped.

Practice Area:

SECTION 8. ADVERSE CONDITIONS

Vision and-or maneuverability are affected.

1. Adverse conditions usually demand:
NO sudden braking
NO sudden steering change...lest you skid
NO sudden acceleration

2. Wet roads: Easy gas, easy steering, early and gently braking, slower speeds.

3. Corners: Extreme caution; ease off gas very early and avoid braking during turns.

4. Signal turns earlier than you would normally.

5. Turn headlamps on during dull days or when any precipitation is present. Dull colored cars are even more difficult to see at such times, too.

6. Headlights should be on low beam during precipitation during dusk and darkness.

7. Use parking lights only when your car is not moving; when parked off the road use your four-way flasher lights.

8. Snow and ice: Easy gas, steering and braking.

9. Emergency stopping: See no. 20 (rapid pumping brake action).

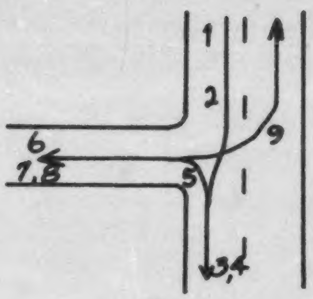
10. Ice patches: Brake before and after, if you must, but not on the ice patch.

11. Stopping or slowing: Tell drivers behind you by lightly pumping your brake pedal to flash your brake lights.

12. Also see skid recovery, no. 24.

SECTION 9. TURNABOUTS

The easiest, and often the safest, way to turn around is to drive around the block. Here are other ways ranked from the most to the least desirable.

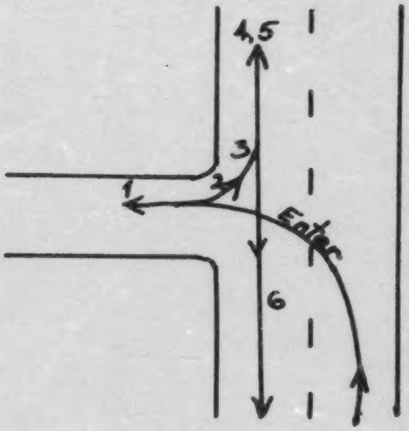


A. **Reverse Turnabout** (to be used in town)

1. Mirror check
2. Signal right
3. Stop within 2 feet of curb with rear of car one-half car length beyond alley
4. Clear behind?
5. Steer hand-over-hand to right while backing slowly and looking primarily over right shoulder
6. Stop when front end of car is clear of street; wheels are straight or slightly left—did you look behind until stopped?
7. Shift to "D"
8. Signal left
9. Proceed into proper lane when clear

Practice Area:

B. **Backing from Alley or Driveway to the Right** (Practice in alleys).
Delay your left turn when entering so as to keep to the right of the alley. This will help to keep your left fron wheel off the lawn in step 3 below. Enter the alley just enough to be clear of traffic.



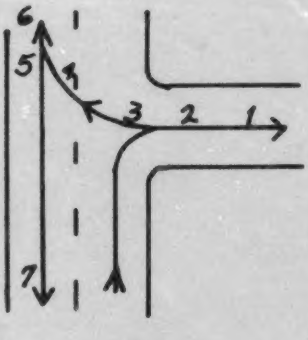
1. Clear behind?
2. Stop for street
3. Turn right hand-over-hand rapidly while backing slowly; look primarily to the right rear
4. Straighten wheels (turn left) and stop
5. Shift to "D"
6. Proceed

If you drive ahead of the sidewalk be sure to stop for it (as well as for the street) when you back out.

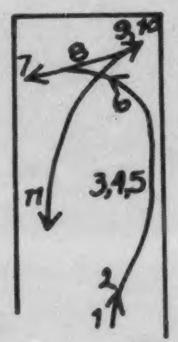
Practice Area:

C. **Backing from Alley or Driveway to the Left** (Practice in alleys).
Delay your right entry turn so as to keep your right rear wheel off the curb. Enter the alley just enough to be clear of traffic.

1. Clear behind?
2. Stop for street
3. Now, shift vision to looking back over left shoulder, BUT just before the rear of the car is backed to the middle of the street...
4. Shift your vision to look over your right shoulder, followed immediately by...
5. Straightening (turn right) your wheels in the far lane; stop
6. Shift to "D"
7. Proceed



D. **Dead-End Street (Three-Point) Turnabout.**



1. Mirror check
2. Signal right
3. Stop close to curb or roadside
4. Signal left
5. Glance back over left shoulder
6. Slowly move car while turning left rapidly
7. When front end of car is nearly at the curb turn right rapidly; stop

*8. Back slowly while turning right rapidly; look primarily over your right shoulder to see out rear window.

9. Now, to see the curb better look back over your left shoulder; when rear of car is nearly at curb turn left rapidly and stop.

10. Shift to "D"

11. Proceed

*In Step 8, back just far enough to permit car to clear curb when driven forward.

Practice Area:

SECTION 10. STARTING ON AN UPGRADE

*1. Hold footbrake down with left foot.
2. Shift to "D" or "L" as desired.
3. Accelerate and release footbrake.

*Shift left foot to brake after full stop is attained.

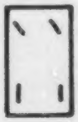
Practice Area:

SECTION 11. PARKING ON HILLS

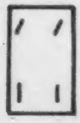
Directions below are for parking on the right side of the street. For parking on the left side of the street reverse all wheel directions.

A. Upgrade wheel positions:

1. With a curb—front wheels turned left touching curb



2. Without a curb—front wheels turned right



B. Downgrade wheel positions:

1. With a curb—same as A-2, above
2. Without a curb—same as A-2, above

C. Procedure:

1. Signal and check mirror
2. Stop within 6 inches of curb or roadside

*3. Shift to "N"

4. Ease car into curb (if there is one) while turning wheels rapidly to the lock position in the proper direction (on upgrades, back gently into curb). If there is no curb turn wheels appropriately while moving car mere inches.

5. Shift to "P" gear
6. Apply parking brake

D. Leaving hill parking:

Leave just as you would leave any parallel parking space EXCEPT when leaving downhill parking be sure to back up and straighten front wheels to avoid driving over a curb or onto a lawn.

* Proper parking direction can be accomplished by allowing car to roll on it's own. Steer so front wheels touch curb.

SECTION 12. DIAGONAL PARKING

A. Entering on right

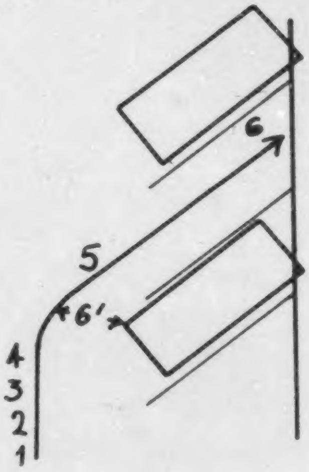
1. Mirror
2. Signal
3. Approach at least 6 feet behind parked cars

4. When your front window post is in line with the left rear corner of car A begin turning right.

5. Slowly straighten to the left so as to clear cars A and B and center in parking space (meters are not always centered)

6. Touch curb gently; stop (remember, your right front wheel will touch the curb long before your door posts are even with those on car B).

7. Shift to "P" gear.

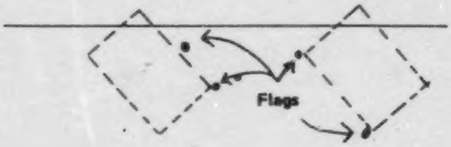


B. Leaving diagonal parking

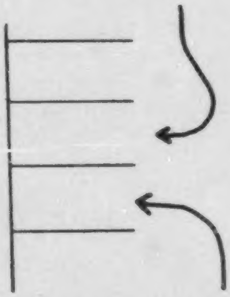
1. Front wheels straight?
2. Clear behind?
3. Back straight until rear bumper is even with A's
4. Turn hand-over-hand to right while backing; look primarily to rear over right shoulder but also check to the left
5. Will you clear car B at your left-front?
6. Straighten wheels (turn left); stop
7. Shift to "D"
8. Proceed

C. Flag diagram for "dry-run" practice

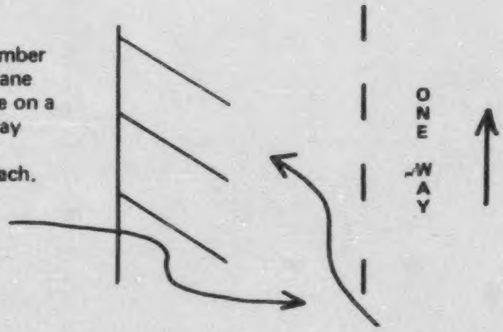
Park D.E. car diagonally. Then place flags as shown. If a painted lot is used, it will be easier to do.



D. Variations in Diagonal and Perpendicular Parking



Backing into such spaces is generally prohibited.



Remember your lane change on a one-way street approach.

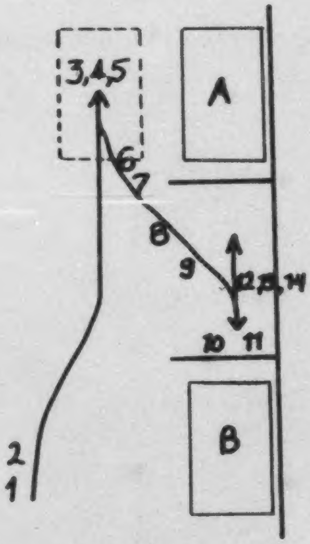
E. When you leave an off-street parking area, you are required to stop before the crosswalk even though a stop sign is not placed there.

Practice Area:

SECTION 13. PARALLEL PARKING

A. Entering on right

1. Mirror
2. Signal right
3. Stop two feet from car A with rear bumpers even
4. Clear behind?
5. Steer rapidly right hand-over-hand while backing slowly
6. When the center of your car is aimed at the left rear corner of parking space (point C) **immediately straighten wheels** (center steer)
7. See that you clear car A
8. While backing slowly, steer rapidly left when right front of car clears car A rear bumper
9. Look to rear
10. Stop before touching car B
11. Shift to "D"; ease forward while steering right
12. Center car in space
13. Shift to "P"
14. Set parking brake, remove key and leave on curb side in traffic situations

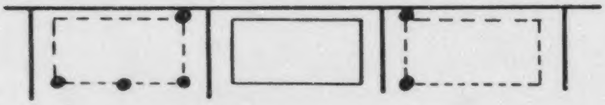


B. Leaving parallel parking

1. Clear behind?
2. Enter from curb side in traffic situations
3. Back, turning slightly right (to get right front wheel away from curb)—do not touch car B
4. Shift to "D"
5. Signal left
6. Glance behind over left shoulder (do not trust mirror alone)
7. Turn left rapidly (lock position) as you leave

8. Straighten wheels to right only when your car's door post is in line with the rear of car A (point D); sometimes you may straighten earlier.

C. Model for using flags for "dry-run" practice.



Park driver education car in space, then place the four flags 4' to front and rear, the fifth flag 9' ahead and the sixth flag another 9' ahead.

Practice Area:

SECTION 14. CITY TRAFFIC

Look for these situations:

1. Pedestrians at corners, in crosswalks of your turning path, and between parked cars.

2. Cars preparing to park or leave parking.

3. Pedestrian lights changing to DON'T WALK—a sure sign you will get a red light soon.

4. Tailgaters—follow the car ahead by a bigger margin—check your mirror often.

5. Sudden stops are often made by others to discharge or collect passengers; they often stop half-way around a right turn with the rear of their car still in your lane.

6. Cars that overtake you in the city frequently cut back in too early—they do not want to be in the passing lane at a corner and shy away from parked cars.

7. Drivers may "jump" left turns at a signal light just turning green.

8. Drivers may not get stopped in time for their red light, so move out carefully on a green light.

9. Double-parked cars may "box" you in if you do not change lanes soon enough to avoid them.

10. Intersections may be slick due to ice, packed snow, oil droppings from cars, leaves, and traffic "polishing".

11. Especially watch for bicyclists and motorcyclists. They weave, make turns inside your turning arc, are difficult to see, and can stop in less distance than a car traveling the same speed.

12. Delivery vans may have sliding side doors so the first warning you get from an alighting driver is his body.

Practice area: Work on entering and exiting on one-way streets.

SECTION 15. RURAL ROAD AND HIGHWAY DRIVING

Look for:

1. Blind intersections and dips (many hide cars but have no yellow line).

2. Sharp curves—brake **before** curves (if you have to brake at all, and you rarely should) and accelerate gently coming out of them.

3. Activity at service stations.

4. Slow-moving vehicles, such as tractors, which should usually be treated as if they are stationary.

5. Ice on and below bridges and overpasses when the rest of the road is clear, or on banked curves and shaded areas

6. Vision to be poor at twilight; get headlights on immediately and consider this time to to a good time to eat when on a trip

7. Watch for motorcycles; they are difficult to see and some travel below the prevailing speed of automobiles.

8. County highways to be less well marked and controlled by signs than state and U.S. highways.

9. Detours and construction signs.

10. Utility wires to warn of unmarked cross roads.

Some things to DO:

1. Blend with prevailing traffic; differences in speed cause big problems

2. Have your car well prepared—gassed, tires properly inflated. On long trips have tires inflated two-four pounds above normal pressure and do not bleed out any air from warm tires—pressure build-up is normal.

3. Adjust yourself to the different environment if you have been doing a lot of city driving lately.

4. Check speedometer when slowing for a town. Higher speeds fool you into thinking you are slowed to 25 mph when you are still going 30 or 35 mph.

5. Avoid meeting another vehicle when a bicyclist, parked car, or bridge abutment narrows the swerving path for you or the other vehicle.

6. Signal your intentions early.

7. Eat often but lightly when traveling. Heavy eating induces sleepiness due to heavy digestive action.

Some things NOT to do:

1. Don't let your comfortable car lull you into complacency. It is easy to go 70 mph in today's cars and have it feel more like 50 mph.

2. Don't swerve or brake blindly to avoid small animals or birds; people are infinitely more valuable.

3. Don't drive over hill tops at speeds exceeding your ability to see in time to stop.

4. Don't maintain dry pavement speed on wet roads, especially on older pavements and blacktop roads.

5. Don't turn onto a side road at too high a rate of speed; it may be narrow or composed of gravel, and you may skid.

SECTION 16. GRAVEL ROADS

1. Avoid sudden steering, braking, acceleration; traction is reduced.

2. Watch for unmarked and blind intersections and driveways, narrow bridges, ruts, "rhythm bumps" (wash-board effect), steep hills.

3. Keep well to the right on all hills.

4. Brake early for stops and turns.

5. Drive at lower speeds to counteract longer stopping distances.

6. Beware of hindered vision when going through the dust from another vehicle.

7. Double your normal following distance of hard-surfaced roads (stopping distance, dust, danger of glass damage from stones).

8. Wet gravel may be slimy and very slippery.

9. Utility wires warn of unmarked cross roads; your odometer may help, too, since most roads are at one-half and one mile intervals.

Practice Area:

SECTION 17. STALLED ENGINE

Because of possible traffic conditions try to start the stalled car without stopping.

1. Shift to "N" gear (one of two gears it will start in). Shift PALM DOWN.

2. Steer toward roadside.

3. Turn key to start (you may have to hold gas pedal down)

4. Shift to "D".

5. Resume safe speed.

6. Try to find the cause of the stall (wet spark plugs, cold engine, fast acceleration and fast release in rapid succession, etc.???)

Practice Area: Quiet, level street. Practice between 10-20 mph. Beware a palm up shift to "N"—the car may be accidentally shifted to "P".

SECTION 18. PASSING PROCEDURE

How to pass:

1. Is it legal or safe?

2. Begin pass back where visibility is good (see next page)

3. Check ahead carefully

4. Check both mirrors to be certain you are not being passed

5. Signal left

6. Check ahead again; clear?

7. Accleerate to at least 10 mph faster than the car being passed and move smoothly into the left lane

8. Straighten in left lane

9. Check inside mirror...is passed car visible in it? If so...

10. Signal right

11. Shoulder check over right shoulder

12. Move smoothly back to right lane

13. Resume appropriate speed and cancel signal

Remember: Speed limits apply during passing, too!

NO PASSING Situations:

1. NO before a railroad

2. NO before, or in, an intersection

3. NO before, or on, a curve

4. NO on a hill (or any solid yellow or solid white line on your side)

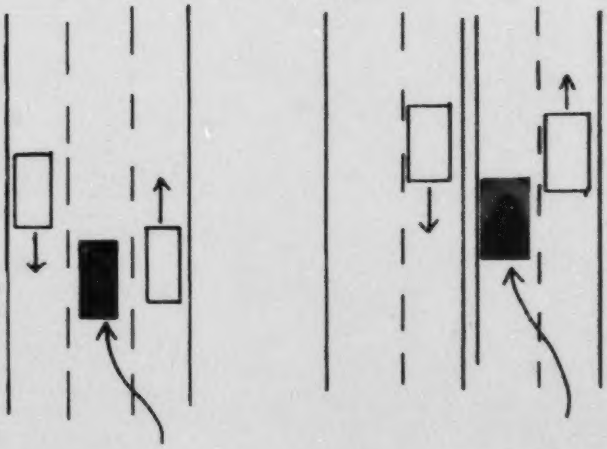
5. NO when oncoming traffic makes you uncertain of available distance

6. NO just before, or on, a bridge

7. NO at a speed higher than the maximum speed limit

8. NO when cyclists, pedestrians, or parked cars are along the road shoulder (a swerving path is lost)

9. NO in these cases:
because you have no swerving path!



Positions preparatory to passing GOOD position: Driver can see oncoming car and has space in case the truck stops.

POOR position: Driver cannot see oncoming car; if the truck stops he does not know whether or not a swerving path exists.

Practice area:

SECTION 19. PASSING GEAR

Press the right toe down sharply on the gas pedal to "downshift" for extra power when you wish to accelerate more rapidly. Some cars may not "downshift" above 60 mph. The car will automatically shift back to the original gear.

Practice Area: Rural hardtop roads.

SECTION 20. SLOW (OR STOP) AND SWERVE TO AVOID COLLISION

This technique assumes that steering is necessary and helpful; often obstacles may be avoided if steering may be maintained. If steering is no object, use the panic stop

1. Pump brake pedal rapidly while...
2. Steering in the desired direction.

Between brake applications the pedal must be completely released in order to permit the wheels to rotate—unless they do steering is impossible. This pumping action is a rapid-fire, staccato action and is not to be confused the gently, slow movement so often associated with snowy streets in the winter.

Optional method for advanced drivers:

1. Pump brake to the bounce rhythm of the particular car (varies as to car and suspension, load, etc.) to enhance braking traction at the low point of the bounce while...
2. Steering in the desired direction.

Practice Area: Clear vision area. Ice and snow in winter, loose gravel in other seasons. Practice below 20 mph. Teach pumping action without steering first.

SECTION 21. RIGHT WHEELS ONTO ROAD SHOULDER

Due to distractions, sleepiness, a gust of wind, or a maneuver to avoid an oncoming car, you may find yourself in this situation. Many, many accidents result from the cardinol sin: coming right back on at cruising speed.

Procedure:

1. Steady the steering and keep the right wheels away from the pavement edge—they may catch and induce partial loss of control, a skid, or both.
2. Slow to 15-25 mph, depending upon road conditions and the difference of the levels of the road and shoulder (if you brake, be gentle about it—you may induce a skid).
3. Clear ahead?
4. Clear behind? All right, then...
5. Steer moderately left (to get back on pavement).
6. Straighten quickly to stay in your lane.
7. Resume proper speed.
8. Diagnose reason for getting off the road—need sleep, a rest break?

Practice Area: Speed: 20, 30, 40.

SECTION 22. TIRE BLOWOUT (INSTANTANEOUS DECOMPRESSION)

While this is a rarity for properly maintained tires, handling it demands one thing particularly: Do NOT slam on the *brakes!*

1. Hold steering wheel firmly with both hands (power steering helps).
2. Ease off gas pedal.
3. At low speed, guide car off road.
4. Brake lightly only at low speed.

Generally you should not attempt to change a tire yourself unless you have an adequate jack, safe working room and a companion to look out for other cars.

SECTION 23. BRAKE LOSS

1. Pump brake pedal

2 or 3. Shift to a lower gear

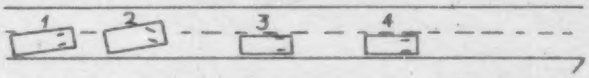
3 or 2. Apply parking brake (it may be released and reapplied in a pumping action provided the release lever is kept in the release position with one hand while pumping it with the left foot—assuming a foot ioerated parking brake).

Practice Area: Practice at 20 mph and under.

SECTION 24. SKIDS

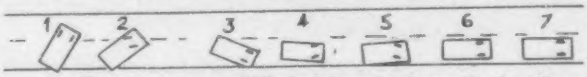
DO NOT slam on brakes!

A. Mild Skid (assume a skid to the right)



1. Ease up on gas a little but do not release it altogether as a rule.
2. Steer gently to right.
3. Straighten (left) as car straightens.
4. Gentle gas pressure to keep control.
5. What caused the skid?—make adjustment for conditions.

B. Severe Skid (assume a skid to the right)



1. Ease up on gas a little but do not release it altogether as a rule.
2. Steer quickly right.
3. Car may counter-skid to left, so straighten AND...
4. Steer to left.
5. Steer gently to right if necessary to overcome any over-correction (you may have several counter-skids to correct in this manner).
6. Steer straight as car straightens.

7. Gentle gas pressure to keep control.

8. What caused the skid? Make necessary adjustments.

C. Avoidance of Skids

1. Use tire chains when bad conditions are forseen (some states require snow tires in winter months, however they are of little value on hard-packed snow or ice). Some states permit studded tires, however they may have a less favorable stopping distance on dry pavement.

2. Have deep tread, properly inflated tires.

3. Brakes should be properly adjusted.

4. Drive at sensible speeds, turn carefully, brake easily and early, load your car properly, "sense" road conditions constantly.

SECTION 25. GETTING UNSTUCK

1. *Shift to "D"

2. Accelerate.

3. At end of forward motion, release gas pressure and shift to "N".

4. At end of backward motion, shift to "D" and accelerate.

5. Repeat 3 and 4 until you are free; once free keep moving and get onto a firm surface.

*"R" gear may be used in the place of "D". Apply the same techniques.

If moderate attempts do not succeed, get towed out. If an automatic shift car is to be towed more than one mile (and that at low speed) it should either be towed rear end raised or else it should have a rear wheel dolly suspend the rear wheels off the ground to avoid transmission damage.

Practice Area: Simulate in a rut on a gravel road with excellent sight distance if an opportunity is available. In winter, carefully choose an area for possible use.

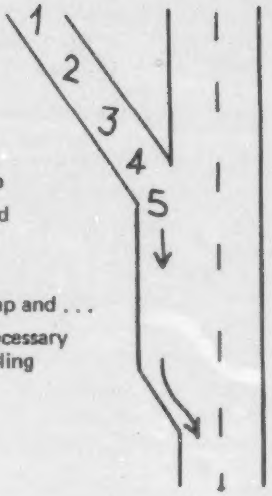
SECTION 26. EXPRESSWAYS

Entering.

1. Check gasoline supply.

2. Know where you will get off before you enter.

3. See diagram



1.—Survey entry ramp

2.—Pick merge gap and signal

3.—Accelerate

4.—Re-check merge gap and . . .

5.—Adjust speed as necessary to merge at the prevailing speed if possible

Driving:

1. Drive at the prevailing speed on the expressway. Speed differentials are more dangerous than speed itself.

2. Change lanes carefully (see no. 6)

3. As speed increases, increase your following distance. The normal one car length for each 10 mph might better be six car lengths at 50 mph, eight at 60 mph and ten at 70 mph. The two second rule may also be used.

4. Help others enter, slow, accelerate or change lanes to help them.

5. Check your speed regularly—speed is deceptive on expressways.

6. Here are several conditions necessitating a state of readiness on expressways:
a. bunched cars
b. tailgaters
c. trucks ascending grades
d. slow vehicles in left lanes
e. slow vehicles in entrance ramp
f. vehicles on shoulders

7. Drivers of convertibles, sports cars and motorcycles tend to be more aggressive than other drivers and bear watching.

8. When drowsy find a rest area to pull into. Avoid stay awake pills—when their effectiveness is exhausted, some people react by passing from a state of general alertness to full sleep. Take a rest break every two hours.

9. On urban expressways do not use the extreme right lane in busy areas if you are traveling through the city; entering and exiting traffic will use that lane and trucks may be required to use it.

10. Watch ahead several vehicles for early clues of trouble.

Exiting:

1. Know where you are to exit; watch advance signs overhead.

2. You should rarely slow before entering the exit lane-ramp.

3. See diagram on next page.

4. Do not back up for a missed exit—go on to the next one.

5. Never make a U-turn; crossovers are for police cars and emergency vehicles.

Breakdowns:

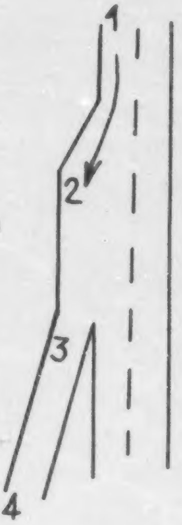
1. Careful checks will avoid them—on an expressway they can be very expensive.

2. Drive well onto the shoulder—if you cannot, put your four-way flasher on (turn signal if without flasher and get out of the car!

3. Tie a handkerchief (or other item) on a door handle or raise the car hood.

4. Wait for assistance. You may not want to wait in your car (particularly at night) since drivers may follow the car ahead and "follow" you onto the road shoulder.

5. When re-entering the travel stream, wait for a l-o-n-g gap. Use a paved shoulder to permit entering at a more favorable speed.



1.–Be in proper lane and signal
2.–Slow after moving into exit lane
3.–Obey posted speed
4.–Adjust to regular streets

Practice Area:

SECTION 27. STEEP HILLS

To conserve braking power on downgrades use a slow, pumping action in braking and sometimes shift to "L" gear (usually below 40-50 mph—check your car's manual) for greater engine "braking". (Also see no. 23)

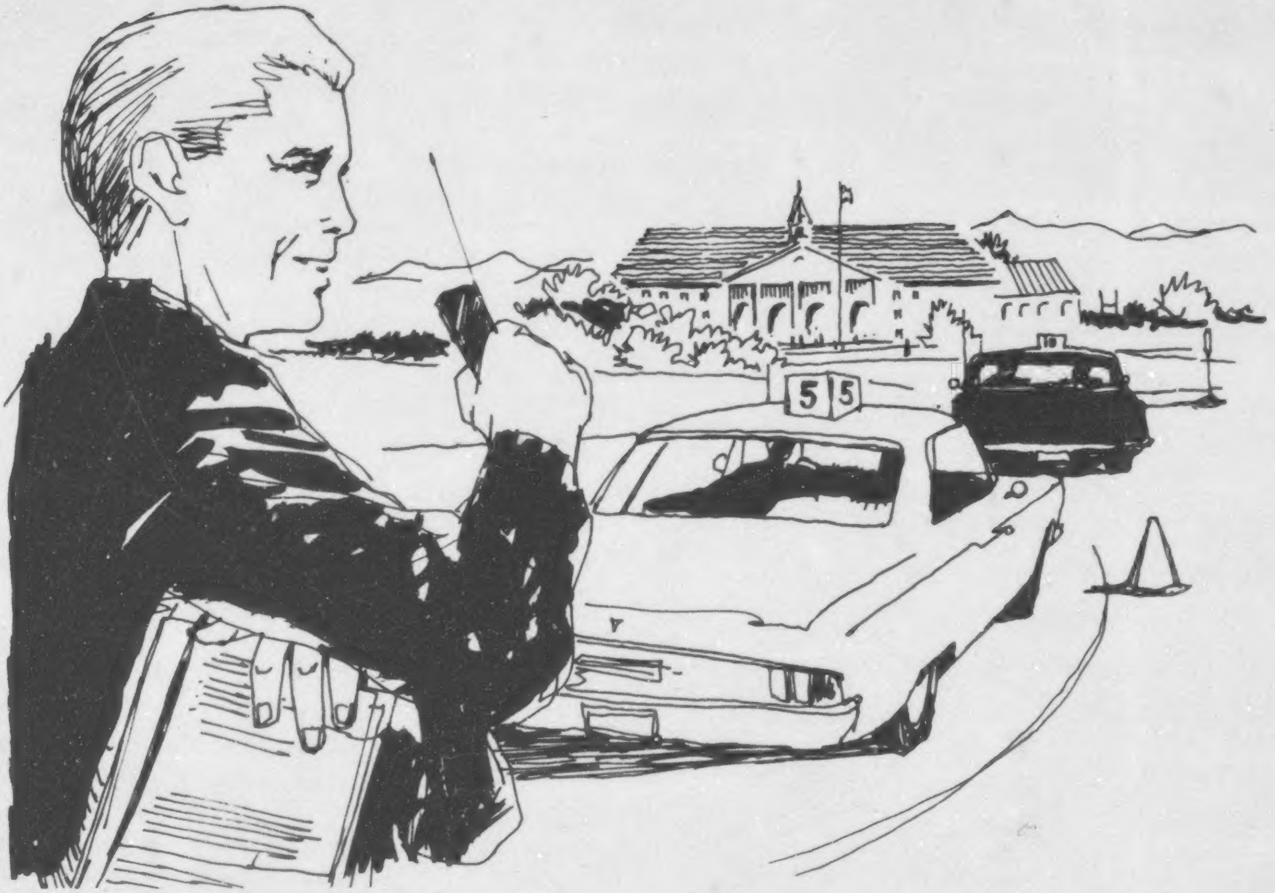
SECTION 28. FINAL DRIVING EVALUATION

1. Familiar route to check skills.

2. Unfamiliar route to check skills in an area demanding perceptual cognition.

An adequate driver is one who perceives early, knows what to do, and does it in such a smooth manner that riders are aware of one thing above all else: A comfortable ride that brings them to their destination as rested as possible and in a pleasant state of mind.

When a driver has had a close call he should be happy he has escaped but should determine what early clue(s) he missed since all but a few of other drivers' errors may be adjusted to smoothly.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Part 4. Special Teaching Aids

A. INTRODUCTION

In order to provide more effective instruction to students, it is frequently necessary to utilize special testing devices and devices simulating actual road conditions. These devices can be valuable teaching aids since they can be used to supplement the classroom phase of instruction and to introduce and complement the in-car phase.

Behind the wheel instruction can be provided in many different ways; in a dual-control vehicle, on a multiple vehicle driving range, in driving simulators or any combination of these as long as the ratios that are indicated by current research are utilized. All instructors must keep in mind that these devices are not a substitute for actual road experiences, but are only teaching aids that assist in developing better drivers.

B. OFF-STREET PRACTICE AREA

1. General Information

Although an off-street practice area is a facility rather than a piece of equipment, it is still classified as a vital teaching aid. This is especially true if school system does not have either a simulator or a range program. The major element of consideration is that every student must have ample practice in the basic driving skills before he is permitted to operate a vehicle in traffic. This usually necessitates the use of a parking lot, a closed road or a road with minimum traffic.

C. MULTIPLE-VEHICLE DRIVING RANGE

A ratio of two hours of multiple-vehicle instruction may be provided in lieu of one hour of practice driving with six hours of range instruction for a maximum of three clock-hours to meet minimum state requirements.

1. General Information

The multiple-vehicle driving range is a mass instruction technique utilizing an off-street driving area. This facility differs from the one previously discussed in that it enables one instructor to teach groups rather than individual students. Several vehicles are used simultaneously to provide basic instruction to several students.

2. Method of Instruction

There is no doubt that this method can provide the most efficient and effective development of basic operational skills and maneuvers for large numbers of students.

Perhaps the most important advantage of this method is that the teacher can create and program a repetitive sequence of exercises in a controlled environment. By operating 6 to 12 cars on a limited, carefully designed area, the teacher can also plan traffic conditions that will give the students experience in a variety of situations similar to those to be encountered on the street. There is assurance, too, that each student can have an opportunity to practice the situation until he becomes proficient.

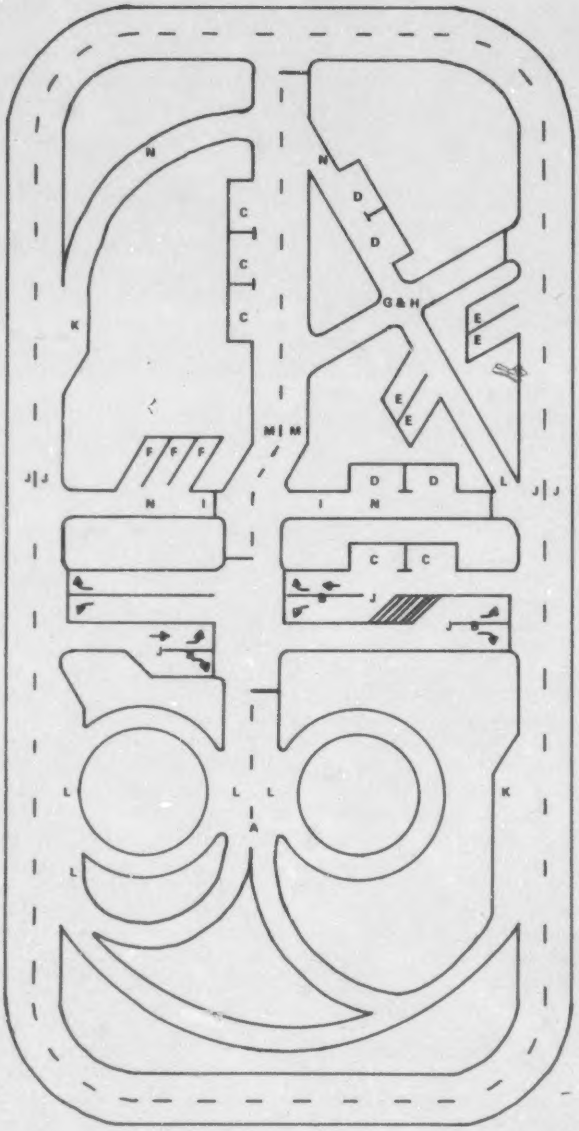
Since the student is expected to control the vehicle solo from the first lesson, he learns to drive without developing undue dependence upon his teacher. Because a student is more on his own, he has better opportunity to accept responsibility for his actions as a driver and to exercise self-control.

For the multiple-vehicle method to be effective, students will need to have a complete understanding of the exercises to be performed, the traffic movements to anticipate, and the relationship of the driving range experiences to the total driving task. This can be accomplished by visual presentations, first of the total driving range facility accompanied by an explanation of the various exercises and their functions. Then, as needed, an explanation of procedures to be followed in executing each specific activity can be presented before the actual demonstration takes place. These presentations can be made by utilizing transparencies, slides, models, printed diagrams, or when practical films. A printed set of instructions are required governing range rules, behavior and operation, and detailed procedure sheets. This means it should be imperative that classroom and laboratory instruction take place concurrently.

If students are to understand the relationship to skill development and the practice of specific exercises to the total driving task, then it may be more advantageous to afford the procedure as the instructor moves along side each vehicle to make individual checks. Then the teacher guides one student at a time through the steps of moving the car forward a short distance and stopping. As the students become more proficinet, all cars are moved at once. When the cars reach the edge of the range, the same procedure is followed for backing. After half of the class period is elapsed and all vehicles are backed to their original positions, the process is repeated with the second group of students who have been observing from the back seat.

After the first lesson, at least one new maneuver is introduced each period. The nature and sequence of succeeding exercises or maneuvers depend upon the size and layout of the range plus the teacher's ingenuity.

Instructor location is another important consideration when using the multiple-vehicle method. From the standpoint of the two basic objectives, the development of basic operational skills and efficient visual habits, the instructor will need to be on his feet equipped with a reliable but portable communication system. The teacher should be located in such a manner as to insure observation of the total facility at any given time, and still be free to move to any other area where he might be needed. He will need to be on the spot to demonstrate and assist students attempting new exercises or experiencing difficulty with previously introduced lessons. From time to time the instructor may want to ride briefly with individual students.



SCHEDULE C
PROPOSED MULTIPLE-VEHICLE DRIVING RANGE FOR USD 383

A—Figure "8" Exercise. B—Double Car Garage Exercise. C—Parallel Parking (Right). D—Parallel Parking (Left). E—Angle Parking (60 degrees). F—Angle Parking (75 degrees). G—"T" Exercise. H—"X" Exercise. I—Head-In Parking & Three Point Turnabouts. J—Lane Changing & Passing. K—Deceleration Exercise. L—Merging Exercise. M—Offset Exercise. N—One-Way Street.

The following techniques have been suggested by experienced teachers:

a. Use simple, direct commands based on key words.

b. Use a positive commanding method of giving directions and instructions.

c. Avoid double-meaning terminology and selection of words that convey meaning for all types of cars used.

d. Preface commands with "students name," "car identification number," or "all cars" depending on whose attention is desired.

e. Limit guidance, direction to essentials thereby developing greater self-reliance on the part of the student.

f. Know facility's potential "trouble spots" (e.g., a tight turning space, a strech of roadway where sun-blinding is possible, etc.) and initial appropriate actions.

g. Alert students with defensive driving tips, precautionary suggestions, etc.

h. Use special arrangements for those few students unable to safely perform and profit from multiple-vehicle method instruction.

i. Make a soundly conceived "Emergency Plan" and a calm, competent manner of executing it should the need ever arise.

j. Frequently praise students on correct performances.

Careful planning by the teacher and thorough preparation of the students must precede the first lesson on a multiple-vehicle facility. Two instructional plans have been used effectively for the initial experience. In either case, it is strongly recommended that two students be assigned to a car for the first three or four class periods of instruction. Initial motor skill trails are usually very exhausting since the learner is likely to begin with considerable muscular tension and surplus motions. Energy is also consumed by anxiety and fear.

In one approach the instructor starts with four students in a vehicle and demonstrates predriving procedures, starting, turning, and stopping. Each student in turn demonstrates his ability to perform these activities at some minimal level while the instructor sits in the seat beside him. Then two students are assigned to a car and directed to follow the demonstration vehicle around the area single file as the instructor repeats the process until all students are checked out.

The other approach starts with the vehicles lined up parallel at least fifteen feet apart along one end or side of the range. After a briefing of the lesson plan, the teacher assigns one or two students to a car and directs the one operating the vehicle to execute preparatory steps for starting the engine. Using the communication system, the teacher "talks through" steps for starting the engine to all the drivers. Students repeat this opportunity to apply these skills and experiences as soon as possible in an on-street setting. Activities can be selected to challenge the students' abilities and at the same time allow the student to identify those skills needing more practice. Using this approach, students would receive 3 to 4 class periods of multiple-vehicle instruction and then alternate driving range experiences with on-street instruction. Each succeeding lesson on the driving range would be designed to acquaint the student with a specific type of situation to be encountered later on-the-street. This plan also tends to reduce the possibility of monotony.

3. Range Design

No specific time allotment has been established, nor is it feasible to make such a recommendation without reference to a specific facility. If a comprehensive range can be designed that duplicates major types of situations, allows speeds of 10-15 mph., can facilitate the development of basic, visual habits and judgements, and is equipped with sufficient numbers of vehicles to generate realistic traffic movement, then 6 clock-hours on the multiple-vehicle area and 3 clock-hours on-the-street may be sufficient.

As a given facility is reduced in size or complexity to the point that only basic manipulative skills are developed, then 2 to 4 clock-hours per student and 4 to 5 hours on-the-street may be necessary to achieve desired goals.

The relationship of the kind of experience gained on the driving range to those on-the-street in the dual-control car is obviously tied to to the size and design of range facility to be used. In general, lessons on the street should be devoted primarily to the development of those mental processes having to do with sensory perception, judgment, and decision-making. It is also necessary that students have an opportunity to handle high speeds, expressway type situations not included on the range.

Laboratory instruction can be greatly improved through the use of multiple-vehicle driving ranges which promote perceptual, judgmental, and decision-making abilities. These experiences should be preparatory to, but integrated with, on-street traffic experiences. The design of multiple-vehicle facilities which emphasize the development of these human functions differ from traditional ranges which require the student to master a set of manipulative exercises. These latter, station-orientated facilities do not encourage skill development other than those required for maneuvering a vehicle in close quarters at low speeds. Indeed, beginning drivers do need to master the control of the vehicle before they are turned loose on the public highways, but perhaps the few precious hours of instruction they receive in driver and traffic safety education should be devoted to other, more beneficial activities.

Driving ranges which emphasize the development of perception, judgment and decision-making will allow the students to "mix" on the range. Vehicles will not be kept in exercise areas for the major portion of the range lesson. The specific objectives of a range designed with this principle in mind are to enhance the visual search patterns, judgment and decision-making abilities to beginning drivers. Lessons can be structured in such a manner that the student is required to observe and analyze traffic in a critical manner, thereby enabling him to merge and-or blend with the flow of traffic on the facility under conditions comparable to real world driving.

D. DRIVING SIMULATORS

A ratio of four hours of driving simulation instruction may be provided in lieu of one hour of practice driving with twelve hours of driving simulation for a maximum of three clock-hours.

1. Method of Instruction

The driving simulation is a laboratory method of instruction which utilizes a system for training students in filmed traffic situations. In the simulation laboratory the student sits in a stationary simulator car unit and observes filmed sequences of roadway traffic scenes shown on a wide screen at the front of the classroom. What students see represents the view through the windshield of a vehicle moving in traffic. The learner is confronted with sensory input and, as an operator of the simulator car unit, is required to make responses that a driver in real situations should perform.

This laboratory method is a programmed, group instruction system which requires student reaction with filmed driving situations. Through the interaction of students with the system components and teacher actions, the students can receive instruction in most of the behavioral performances required by the driving task.

Perceiving the total driving task includes: identifying, perdicting, decision making and executing. Identifying and perdicting includes seeing and realistically interpreting the driving scene. In order to do this, one must possess sufficient knowledge, acceptable attitudes, emotional stability and reasonably good sensory equipment. Likewise, **decision-making** depends on our knowledge, attitudes and emotional maturity. Executing depends on how well we have perfected basic and emergency driving skills. To prepare young drivers, particularly in the first two phases of the driving task, we must confront them with key situations that they are likely to encounter in traffic. Here is the important strength of the simulators and their accompanying films. In the learning environment of a simulator classroom, students can be exposed to a basic core of urban, rural and expressway situations to help develop perceptual skill and judgment.

Increased proficiency in the **performance** phase of driving can also be an outcome of simulator instruction for these two reasons. First, if recognition and decision-making are developed, certainly improved performance will follow. Second, simulators show promise of developing basic skills directly. Students learn the **sequence** of steps for preparing to start, starting the engine, turning, lane changing, parking, passing and maneuvering on hills that reduces the time required to perfect the execution of these skills on-street. Furthermore, the student can learn appropriate responses to emergency situations and the reasons for them, without the attendant hazards of actually being in a car on the toad.

Simulators are not designed to replace the teacher, but rather to furnish him with a valuable "tool" to use in achieving course objectives. In fact, the effectiveness of driving simulators, as with other educational aids, is in direct proportion to the skill of the teacher using them.

The teacher must prepare the students for the film, interject relevant comments during the film, and follow-up with a discussion of key situations. Moreover, the teacher should relate the film content to the other phases of the program and to local traffic conditions. Supplementary aid, such as a traffic situation board, chalkboard, filmstrips and slides can help accomplish this objective.

2. Driving Simulation System Components

The driving simulation system consists of four basic components: simulator car units operated by the students, a

central control and recorder unit, a motion picture projector, and a set of programmed films.

The simulator unit is equipped with operable controls, gauges, and safety devices commonly found on passenger automobiles. These controls usually include clutch and brake pedals, accelerator pedal, steering wheel, gearshift or selector lever, directional signals, horn, key operated ignition switch and starter, parking brake, and headlight switches. Each of the controls is engineered and constructed to give the students the impression of operating an automobile. These realistic controls are connected electronically to the central and recorder unit. Each unit also has an error identification display or correction indicator panel which enables each student and the teacher to visually monitor the responses being made by that particular student.

The central control and recorder unit is a console mechanism device that enables the instructor to control input information initiated by student responses or actions.

This arrangement enables teachers to be aware of student responses to wide-screen color films especially developed for use with the equipment. The control console can be operated manually or automatically. A record of each student's performance is made available for teacher interpretation, appraisal of individual or group performance, and scoring purposes.

The programmed films provide for displaying a systematically organized sequence of traffic situations as found in the highway transportation system. These filmed situational sequences require student responses such as signaling, braking, shifting, steering, and accelerating that might be required by a driver in a motor vehicle on a public street or highway. Sound effects are employed so that the filmed roadway and traffic portrayed not only looks but sounds real. These color films are coded according to the correct responses required in order for the student to cope successfully with the situations pictured. Such a film series provides the teacher with a training aid which requires the student to observe, interpret, and make proper decisions as related to driving.

When enrollment warrants, traffic simulators can be an effective means of reducing the costs of laboratory instruction in driver education. The most important advantage, however, is the improvement in the educational effectiveness of the course. Utilization of simulation can provide a method of scheduling which affords a better opportunity to totally integrate the elements of the course (classroom, simulation, and on-street experiences) into a unified program. This plan also can improve a teacher effectiveness through the uniform planning and cooperative efforts of all teachers involved.

A program of instruction for adults can better accomplish its objectives through the use of simulation. Teaching of physically and-or mentally handicapped students can also be accomplished in a secure environment.

3. Planning Of Facilities

Before contracting the manufactures, the administrator and the driver education department should determine the facts that will have a direct bearing on the size and cost of the installation required. This would include program objectives, the number of eligible students, future enrollment, room availability, program structure, and the size of the instructional team.

4. Types Of Facilities

Three types of facilities are commonly used for driving simulators: classroom within regular school buildings: portable classrooms without wheels; and mobile classrooms (10-12 foot wide trailers). There are advantages and disadvantages of all three types of facilities.

When space is available, the permanent installation is generally recognized to be the most desirable. The space needed will vary with the number of simulator units to be installed. This, in turn, is a reflection of the enrollment and scheduling.

School districts may choose one of several financing plans:

a. Outright purchase
b. Lease
c. Lease-purchase where the school obtains the title after an agreed period.

5. Maintenance

When a simulator installation is acquired through purchase, maintenance is usually the purchaser's responsibility subject to the protection of the warranty. One common way to obtain maintenance is to purchase an annual maintenance contract from the manufacture. If the school wants to handle its own maintenance, the manufacturers provide maintenance classes several times a year where the purchasing school can send a person for training.

Lease and lease-purchase contracts usually include the cost of the regular maintenance service. The school might want to ask the manufacturers to submit copies of their standard maintenance contracts in advance so that the school could advise the manufacturers of any special requirements prior to the letting of bids.

Schools should specify all equipment and services desired for bids or quotes. If there is a question as to what is part of the basic installation and what is an option, the school should check with the manufacturers. This can help the school avoid delays, unexpected expenses, and misunderstandings.

The instructor should be able to use all of the equipment effectively and be able to carry out a few preventive maintenance practices.

The quality of simulator instruction is usually reflected in the condition of the equipment. Certainly the condition of the equipment reflects whether or not the students have been taught to respect the simulator laboratory.

6. Scheduling

Find the best way to integrate simulation into the present program. This may mean that what is presently being taught in one phase is no longer taught, etc. Scheduling is a major problem in this area and needs to be considered very carefully.

A school district should have an annual eligible population of 400 or more students for simulation to be economically feasible. Although the most effective program employ from

12 to 16 units, a minimum of 8 units should be employed. Scheduling must reflect in-car practice driving during the same period of time or immediately following simulation. This is an important consideration when a shared facility is planned.

There must be a definite plan for implemantation and assurances that the installation will be used in accordance with State regulations. Teachers must be aware of what you can be taught effectively using simulation and what simulation cannot teach.

a. Driving simulation can:

(1) Provide explanations and experiences that will reinforce and expand on those provided in other parts of the driver education program.

(2) Assist students in developing their perceptual abilities by providing experiences through which the students may learn to negotiate traffic situations safely.

(3) Aid in the development of good driving practices and teach the student to respond in a proper manner to the situation that confronts him on the screen.

(4) Provide driving experiences in the safety of a classroom.

(5) Assist students in developing safe driving habits by providing practice in performing procedures such as starting, stopping, lane changing, passing, etc.

(6) Assist students in learning the techniques of many of the physical driving skills such as turning, braking, parking, shifting, etc.

(7) Require each student to make his own decisions in driving through each situation.

(8) Provide the students with information so that any improper decision can be improved while the situation still confronts him.

b. Driving simulation is not:

(1) The panacea of driver education.

(2) A replacement for the teacher nor will simulation diminish the teacher's role.

(3) A replacement for other laboratory or classroom phases of driver education.

(4) Exactly like driving a real car.

(5) At the present equipped to provide every experience possible in driving.

E. MULTIMEDIA

1. General Information

Ever since the first teacher tried to impart ideas and information to students, education has been faced with two major problems. One problem is that it is difficult for the instructor to know how well he is reaching his students—or, if he is reaching them at all. Another problem is the fact that the quality and level of instruction is not uniform, because teachers do their jobs in different ways and tend to emphasize content areas they know best. Students are the ones who suffer. The multimedia system seems to solve some of these problems in the field of driver education.

2. Method of Instruction

As the name suggests, multimedia consists of several different modes of communication. The usual media included are motion pictures, film strips or slides and sound. Given subjects are taught with a certain combination of these media. For example, a lesson in emergency situations is most convincingly taught by motion with appropriate sound effects. Charts or graphs, on the other hand, are best presented in still pictures with sound. Multimedia makes use of the most appropriate media for each aspect of a lesson.

Because of its attention to the development of proper student behavioral outcomes, multimedia has taken two steps toward more effective education. The concept represents latest advances not only in teaching but in what's known about the learning process as well. The first requirement in developing an instructional system of this kind, as in any curriculum development, is analysis of the problem to be solved.

Next the objectives must be mapped out in educational terms. A step-by-step information build-up is planned to the point at which the instructor can confidently ask students to apply previously learned information to a real-life situation. This, in many cases, replaces the method of telling a group of students what they should do and thus not getting the reaction of individual students.

3. Operation of Equipment

Each lesson, or unit, offers easy-to-swallow doses of instruction spiced with pertinent mutiple-choice questions. Students (as many as 400 can be accommodated) answer the questions by pressing mechanical responder buttons on their desks within time limits that vary with the difficulty of the problem. A running count of responses flashes to a meter at the instructor's central console, affording a precise record of student participation. If most of the class errors on a question, the instructor can stop the lesson and give additional branching information. Or he can record the class results on a specially prepared form, so he can reshow and reinforce certain portions at the conclusion of the program.

The film series is designed to take beginning students through driver education's most essential learning phases. Each lesson is completed in itself, since the units are designed to correlate readily with textbook materials and thus provide the teacher as much flexibility as he may desire.

The Multimedia package also includes a teacher's manual explaining the equipment's wide range of uses and how to evaluate student responses.

Part 5. Visual Aids and Reference Materials

A. VISUAL AIDS

1. Introduction

Visual aids, if properly handled, can play an important role in the presentation of a good driver and traffic safety program. However, visual aids are not a substitute for instruction, but a supplement or complement to it. Although there are films and film strips available for most of the topics that are covered in driver education classes, it is not recommended that an excessive number of films be shown at the expense of limiting guidance and instruction.

Every driver educator should evaluate each visual aid before he shows it to his class to make sure the material presented pertains to the topic that he wants to cover. Generally, films can be used to introduce, supplement, complement or review material that is being covered in the classroom situation. It is recommended that the teacher of driver education maintain a film file listing films available for each topic. Each card should contain a film rating, the source, running time, and a brief synopsis.

2. Sources of Films and Filmstrips

a. Aetna Life Insurance Company, Public Education Department, Hartford, Connecticut 06115

b. Aims Instructional Media Services, Inc., P.O. Box 1010, Hollywood, California 90028

c. AAA Foundation for Traffic Safety, 734 15th Street, N.W., Washington, D.C. 20005

d. Extension Media Center, University of California, Berkeley, California 94720

e. Ford Motor Company, Film Library, The American Road, Dearborn, Michigan 48121

f. General Motors Corporations, Film Library, General Motors Building, Detroit, Michigan 48202

g. Keystone Automobile Department, Traffic Safety Department, 220 South Broad Street, Philadelphia, Pennsylvania 19100

h. Modern Talking Picture Service, 3718 Broadway, Kansas City, Missouri 64111

i. National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. 20591

j. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611

k. Safety Department, State Highway Commission, State Office Building, Topeka, Kansas 66612

l. Shell Oil Company

m. The Bill Sandy Company, Inc., 2843 East Grand Boulevard, Detroit, Michigan 48211

3. Topic— Listing of Films. The films have the key letters listed above to indicate their source.

SECTION I— ON HIGHWAY TASKS

Unit A— Basic Control Tasks

Episode 1— Highway Transportation System

1. Stay Alive. (15 minutes) (b.-p.)
Dramatizes the need for and the great value of high school driver education classes.

2. Your Permit To Drive. (10 minutes) (f.)
Emphasizes the privileges and responsibilities of a driver's license.

3. We Drivers. (13 minutes) (f.)
Offers the "whole picture" of typical driving pitfalls and illustrates how we drivers can prevent them from becoming accidents.

4. Teach Them To Drive. (17 minutes) (l.)
Shows the benefits of a high school driver education course.

Episode 2— Vehicle and Raod Surface Interaction—Basic Concepts

Episode 3— Directional Control

1. Driving Under Special Conditions. (19 minutes) (e.-k.)
Deals primarily with the problems of driving in bad weather.

Episode 4— Speed Control

1. Your Car in Motion. (10 minutes) (k.)
Shows that gravity, friction, and centrifugal effect and the force of impact all are nature's law enforcements.

Episode 5— Braking and Stopping

1. Reaction, Brakes, Time and Space. (9 minutes) (b.)
Graphic proof that "tailgating" is ridiculous. A viewer's self-test illustrates reaction time lag. (An excerpt from "Freeway Driving Tactics").

Episode 6— Maneuvers

1. Parking Tactics (16 minutes) (b.)
Details parallel, diagonal, and hill parking, as well as parking lots and the backing of an automobile.

Unit B— Interacting With Other Highway Users

Episode 1— Human Functions and Motor Vehicle Operation

1. In Control. (15 minutes) (m.)
   Provides some answers through highway action and in-laboratory findings of the factual side of what it means to be "in control" at the wheel.

2. Sixth Wheel. (27 minutes) (d.)

3. Defensive Driving Tactics. (b.)
   ABC's of defensive driving—attitude, space, attention.

4. Seeing Habits For Expert Driving. (1 filmstrip with recordings) (e.)
   Unit based on the Smith System and the five seeing steps.

5. Space Driving Tactics. (15 minutes) (b.)
   Explains the necessity of maintaining a "space cushion" around your car.

6. A New Way To Drive. (20 minutes) (k.)
   An intersection collision is used to explain how the concept of preventability was derived.

Episode 2— Impediments to Vision

1. Driving At Night. (10 minutes) (e.-g.)
   Emphasizes hazards of night driving with positive instruction for safe night-time driving procedures.

2. Driving In Bad Weather. (10 minutes) (e.-k.)
   Points out the special driving skills needed for driving in rain, fog, snow, and at night.

Episode 3— Distractions

Episode 4— Movement Within Traffic Flow

1. Driving Highways and Freeways. (10 minutes) (e.)
   Shows correct driving techniques for highway driving for all kinds of road work.

2. Rural Driving. (10 minutes) (e.)
   Speed relationships with other vehicles and roadway elements.

3. Driving In Traffic. (10 minutes) (e.)
   Proper positioning for maneuvering in traffic.

4. Freeway Driving Is Different. (14 minutes) (h.-k.)
   Shows some of the possible hazards of freeway driving.

5. Freewayphobia. (15 minutes) (b.)
   Deals with specific problems and emergency situations encountered on freeways.

6. Freeway Driving Tactics. (16 minutes) (b.)
   How to handle emergencies, land changes, entrances, dangers of following too closely.

7. Whiplash. (16 minutes) (b.)
   Safety measures are stressed to avoid rear-end collisions and their consequences.

8. City Driving Tactics. (17 minutes) (b.)
   Six guideline factors are set forth regarding sight, speed, turns, signals, signs, and space.

9. Driving In The City. (10 minutes) (e.)
   Tips on City driving.

10. Driving Strategy. (5 filmstrips with recordings) (e.)
    Decision Pattern, Strategic Positioning, Adjusting To The Changing Scene, Critical Maneuvers—Skids, Emergency Problems.

Episode 5— Intersections

1. City Driving. (20 minutes) (k.)
   Deals with the complexities that result from increasing traffic conditions; in turns, clearing intersections, choosing proper lanes, and pedestrian problems.

2. Broken Glass. (13 minutes) (d.-k.)
   A study of intersection collisions.

3. Passing Maneuvers. (5 filmstrips with recordings) (e.)
   Basic Passing, Hazard On The Side, Oncoming Traffic, Being Passed, Passing Emergencies.

4. Intersection Maneuvers. (5 filmstrips with recordings) (e.)
   Basic Intersection Maneuver, Through Signal, Right Turns, Left Turns, Right Of Way.

5. Freeway Maneuvers. (4 filmstrips with recordings) (e.)
   Entering The Freeway, Driving At Freeway Speeds, Passing On The Freeway, Leaving The Freeway.

Episode 6— Pedestrians and Animals

1. Lakewood Learns To Live. (12 minutes) (k.)
   Shows how a community organized to prevent pedestrian accidents.

2. Automobile-Pedestrian Collision. (9 minutes) (d.)
   Investigates physical forces in collisions of the automobile with the human body.

3. Dead Right. (10 minutes) (c.)
   Emphasizes safe practices and responsibilities pedestrians must assume for safety.

Episode 7— Motorcycles

1. Motorcycle Training. (b.)
   Tips for the motorcycle driver.

2. Motorcycle Driving Tactics. (15 minutes) (k.)
   Gives pertinent pointers for motorcyclists, involving excesses of speed limitations of the motorcycle—conspicuousness to the motorist, etc.

3. Critical Hours. (20 minutes) (k.)
   Shows a group of young men learning the finer points of motorcycling.

Unit C— Critical Situations

Episode 1— Response Analysis

1. Critical Driving Patterns. (10 minutes) (e.)
   Maintaining vehicle control during loss of vision, loss of steering control or loss of braking.

2. Emergencies In The Making (14 minutes) (c.-k.)
   Depicts situations which face every driver with emphasis on alertness in avoiding emergencies.

3. The Final Factor. (14 minutes) (c.-k.)
   Emergencies are shown developing as a "final factor" that triggers accident situations.

4. The Last Prom. (20 minutes) (k.)
   The effects of a traffic accident resulting from teenage-age carelessness.

5. Handling The Unexpected. (14 minutes) (f.)
   Points out some of the emergency driving situations that may be encountered.

Episode 2— Traction Loss

1. Automobile Tire Hydroplaning: What Happens. (16 minutes) (k.)
   Shows how and why automobile tires lose contact with wet pavement and the relationship between speed, tire wear, and water depth.

2. Skid Control. (20 minutes) (k.)
   Six deadly skids are shown and how the driver can keep control of his vehicle if he knows what to do and what not to do when a skid occurs.

3. Winter Driving. (25 minutes) (k.)
   Illustrates safe winter driving techniques for starting, stopping, and cornering on snow and ice-covered roads.

4. How To Drive On Ice and Snow. (12 minutes) (k.)
   Information about starting, stopping, and driving on ice and snow.

5. Emergency Maneuvers. (5 filmstrips) (b.-e.)
   Controlling Skids, Emergency Braking Skills, Sudden Loss of Sight, Wheels Off The Pavement.

6. Protecting Your Safety Margin.

7. Adverse Weather Driving. (30 slides with script) (k.)

8. Emergency Maneuvers. (5 filmstrips with recordings) (e.)
   Protecting Your Margin Of Safety, Emergency Braking Skills, Controlling Skids, Wheels Off Pavement, Sudden Loss Of Vision.

Episode 3— Vehicle Malfunctions and Failures.

Unit D— Controlling The Consequences of Highway Collisions.

Episode 1— Highway Accidents

1. Intersection Collision. (9 minutes) (d.)
   Evidence of the protection provided motorists by the shoulder strap and lap belt combinations.

2. Safety Belt For Susie. (11 minutes) (d.)
   Discusses value of seat belts.

3. Safety through Seat Belts. (13 minutes) (b.-d.-g.)
   Documentary close-up of collision tests showing effectiveness of seat belts.

4. Safety Through Seat Belts. (15 minutes) (k.)
   Demonstrates through use of dummies in test collisions that the human body can withstand enormous collision stresses if properly restrained by seat belts.

5. UFO-Unrestrained Flying Objects. (14 minutes) (f.)
   Illustrates how the use of passenger restraint systems can help reduce the risk of injury.

Episode 2— At the Collision Scene

1. Empact. (12 minutes) (d.)
   Deals with the force of impact in an accident.

2. Fatal Meeting. (16 minutes) (d.)
   Illustrates the result of improper car handling.

SECTION II— READINESS TASKS

Unit A— Operator Fitness

Episode 1— Alcohol

1. C.R.A.S.H. (28 minutes) (e.)
   Emphasizes the alcohol safety action projects and the success from their existence.

2. DWI Phoenix. (27 minutes) (c.)
   Shows how one city found a way to protect itself against the drinking driver.

3. Drivin' and Alcohol. (15 minutes) (k.)
   Shows the effects of combining beer with inexperience.

4. None For The Road. (12 minutes) (b.-k.)
   Shows what happens to the average social drinker when he drives.

5. The Bottle and The Throttle. (20 minutes) (k.)
   Emphasizes that alcohol and gasoline do not mix.

6. Highball Highway. (12 minutes) (b.)
   Shows the dangers that the occasional drinker may cause.

7. Alco Beat. (11 minutes) (b.)
   Adults are pretested (sober) on a driving range, then tested a day later, after a cocktail party.

8. The Social Drinker And The Anti-Social Driver. (16 minutes) (b.)
   Involves statistical analysis of many automobile accidents involving drinking drivers.

9. Alcohol And Driving. (Filmstrips with teacher's guide) (l.)
   Provides learning experiences that are essential in making wise personal decisions regarding alcohol and driving.

10. Drinking Drivers. (16 minutes) (f.)
    The more alcohol a driver consumes, the more inept and accident-prone he becomes—it is the cold hard confirmed in the this film.

Episode 3— Emotions and Motivations.

1. Passing Fancy. (20 minutes) (k.)
   A mother, rushing around trying to meet time schedules, encounters many passing situations.

2. Stop Driving Us Crazy. (10 minutes) (k.)
   A satire on our driving habits and lack of sense of moral responsibility.

3. What Right Of Way? (15 minutes) (k.)
   Stresses that traffic signs and signals are useless when drivers try to grab the right-of-way.

4. To See Ourselves. (14 minutes) (a.)
   A bad driver learns, embarrassingly, to see himself from "the other fellow's point of view".

5. Look Who's Driving. (8 minutes) (a.-k.)
   A cartoon animation designed to demonstrate to the average driver the perils of acting like a child behind the wheel.

6. Jerks That Irk. (12 minutes) (l.)
   Makes the audience realize they are the victims of doing the same thing to others.

7. Borrowed Power. (20 minutes) (h.-j.)
   The story of a young man who finds himself in a critical situation when he thoughtlessly disregards the rights of others.

8. Motor Mania. (8 minutes) (k.)
   Story of the change that takes place in the average individual when he finds himself behind the wheel of an automobile.

9. Be An A-C-E Driver. (14 minutes) (m.)
Shows how to stay alert, being courteous, and the effects of efficient driving techniques and safe operation of the car.

Episode 4— Fatigue and Carbon Monoxide.

1. Human Factor In Driving. (12 minutes) (k.
Illustrates the effects of fatigue, our eating habits, and the folly of driving when angry or under emotional stress.

Unit B— Vehicle Readiness
Episode 1— Vehicle Sub-Systems—Prerequisite Knowledge.

1. Know Your Car. (15 minutes) (m.)
Explains some of the mechanical aspects of automobiles.

2. Where Mileage Begins. (19 minutes) (h.)
Explanation of what makes an automobile run.

3. Power Train. (13 minutes) (b.)
The why, what and how of the automobile transmission system, in the framework of imaginative animation.

4. ABC Of The Automobile Engine. (15 minutes) (f.)
Illustrates the principle of the four-stroke cycle internal combustion engine.

5. ABC Of The Automobile Chassis. (15 minutes) (f.)
Illustrates and explains the flow of power from engine to wheels in an automobile.

Episode 2— Vehicle Management—Selection and Maintenance.

1. So, You Want To Buy A Good Used Car? (15 minutes) (k.)
Outline of the basic steps in evaluating the condition of a used car.

2. Driving Economically. (17 minutes) (h.)
Familiarizes the new driver with the relationship between certain driving practices and the cost of operating a motor vehicle.

3. Care Of The Car. (12 minutes) (e.-g.-h.)
About automobile maintenance.

4. How To Buy A Used Car. (12 minutes) (m.)
How to judge the value of any used car.

5. Love That Car. (10 minutes) (b.)
A humorous approach to the importance of automobile maintenance.

SECTION III— IMPROVEMENT TASKS

Unit A— Self Improvement.
Episode 1— Risk Acceptance.

1. "9 Out of 10". (Filmstrip with recording) (e.)
A self-appraisal approach to driving and a look at the "other driver".

Unit B— System Improvement.
Episode 1— Traffic Law Enforcement

1. Traffic Court. (14 minutes) (b.)
An overview of traffic court procedures to familiarize the viewer with the process, the variables and the ramifications.

Episode 2— Traffic Engineering

1. Anatomy Of A Road. (27 minutes) (f.)
Looks at the extraordinary planning that precedes new thru-way construction.

B. REFERENCE MATERIALS

1. Books and Booklets

a. Teacher

1. Aaron, James & Strasser, M.K., **Driver and Traffic Safety Education**. The MacMillan Company, N.Y. 1966.

2. American Automobile Association. **Teaching Driver and Traffic Safety Education**. McGraw-Hill Book Company, New York. 1965.

3. American Automobile Association. **How To Drive**. Washington 6, D.C. 1963.

4. Anderson, Wm. **A Summary Report of Effective Behind-the-Wheel Instruction in Driver Education**. Teachers College, Columbia University. 1961.

5. Brody, Leon & Stack, Herbert. **Highway Safety and Driver Education**. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1962.

6. Halsey, Maxwell, **Let's Drive Right—Teacher's Manual**. Scott, Foresman & Co., Fair Lawn, New Jersey. 1958.

7. National Education Association. **A Critical Analysis of Driver Education Research**. Washington, D.C. 1957.

8. National Commission of Safety. **Policies and Practices for Driver and Traffic Safety Education**. N. E. A. 1964.

9. National Education Association. **High School Driver Education**. Washington, D.C. 1950.

10. Sneller, Robert. **Vision and Driving**. American Optometric Association, St. Louis. 1962.

11. Stack, Herbert. **Improving the Attitudes of Young Drivers**. N.Y. Center for Safey Education, New York University. 1948.

12. Stack, Herbert & Elkow. **Education for Safe Living**. Prentice Hall, Inc., Englewood Cliffs, N.J. 1957.

13. Trysor, James. **The Fundamental Principles of Driving**. Banks, Upshaw & Company, Dallas, Texas. 1963.

b. Student

1. American Automobile Association. **Sportsmanlike Driving**. 5th Edition, McGraw-Hill Company. 1964.

2. Department of Law and Public Safety. **New Jersey Driver Manual**. 1968.

3. Glenn, Harold. **Youth at the Wheel**. Charles A. Bennett Company; Peoria, Illinois. 1958.

4. Halsey, Maxwell. **Let's Drive Right**. Scott, Foresman & Company; Fair Lawn, New Jersey. 1958.

5. Lauer, A. R. & Pawlowski, Joseph G., **Tomorrow's Drivers**. Lyons & Carnahan Company, N. Y. 1967.

6. New York University Center for Safety Education. **Driver Education and Traffic Safety**. Prentice-Hall. 1967.

7. Strasser, M. K. **When You Take the Wheel**. Laidlaw Brothers, Incorporated, River Forest, Illinois. 1963.

8. White, Ernest B. **The Road to Better Driving.** Cambridge Book Company; Bronxville, N. Y. 1965.

2. Available Pamphlets

Many textbooks and inexpensive materials are available from private and public agencies. Those listed here are only a fragment of the written materials that can be secured by a conscientious driver education teacher.

a. Allstate Insurance Company, 7447 Skokie Boulevard, Skokie, Illinois.

1. "Avoid Rear End Collisions"
2. "Defensive Driving Tactics"
3. "Expressway Driving is Different"
4. "How Fast Can You Stop?"

b. American Automobile Association, 1712 G Street, N. W., Washington D.C.

1. "Traffic Safety Guides"—Write for bibliography of "Driver And Traffic Safety Education" materials.

c. American Optical Company, Southbridge, Massachusetts.
Survey of State Requirements for Motor Vehicle Operators.

d. Association of Casualty and Surety Companies, 60 John Street, New York, New York.

1. "Common Sense Driving Pays Off"
2. "Driver Education In the Secondary School"
3. "How to Attack the Traffic Safety Problems In Your Community"
4. "Safety Film News"
5. "Traffic News and Views"

e. Automobile Manufacturers Association, 320 New Center Building, Detroit, Michigan.

1. "A Car Traveling People"
2. "Automobile Facts and Figures"
3. "Motor Truck Facts"
4. "The Work Cars Do"
5. "What It Takes To Make Your Car"

f. Auto Industries Highway Safety Committee, 2000 K State, N. W., Washington, D.C.

1. "A Guide For Teen-age Traffic Safety Conferences"
2. "Good Driver Agreements For Young Drivers"
3. "Learning To Live Through High School Driver Education"

g. Automotive Safety Foundation, 200 Ring Building, Washington, D.C.

1. "Highway Facts"
2. "What Freeways Mean To Your City"

h. Ford Motor Company, American Road, Dearborn, Michigan.

1. "Five Steps to Safer Driving"
2. "The Big Plus—Seat Belts"

i. General Motors Corporation, Department of Public Relations, General Motors Building, Detroit, Michigan.

1. "A Power Primer"
2. "Automobile Progress"—(Series of various charts)
3. "Chemistry and Wheels"
4. "Electricity and Wheels"
5. "How to Avoid the Two Car Crash"
6. "How the Wheels Revolve"
7. "Optics and Wheels"
8. "We Drivers"
9. "When the Wheels Revolve"

j. Goodrich Company, Akron, Ohio.

1. "Tommy Gets the Keys"

k. Metropolitan Life Insurance Company, 1 Madison Avenue, New York, New York.

1. "Accident Prevention Can Be Taught"
2. "Guide To Good Driving"
3. "How's Your Driving"
4. "How To Be A Better Teen-age Driver"

l. Motor Vehicle Department (Local or State)

1. "Braking Distance"
2. "Driver's Manual"
3. "On Your Toes In Traffic"
4. "Traffic Accident Facts"
5. "You and Your Driving"

m. National Highway Users Conference, National Press Building, Washington, D.C.

1. "Highway Transportation Story"
2. "Motor Manners"

n. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois.

1. "Trial In Error"
2. "Annual Accident Facts"
3. "Safety Briefs"

Write for a list of "Driver and Traffic Safety Materials".

o. Nationwide Insurance Company, 246 North High Street, Columbus, Ohio.

1. "Ten Common Driving Emergenices And How To Live Through Them"

3. Periodicals

The amount of periodical literature dealing with Driver and Traffic Safety Education is voluminous and would be impossible to present in this guide.

A few of the better known periodical references are listed below.

a. American Driver & Traffic Safety Education Association. "A.D.T.S.E.A. News & Views".

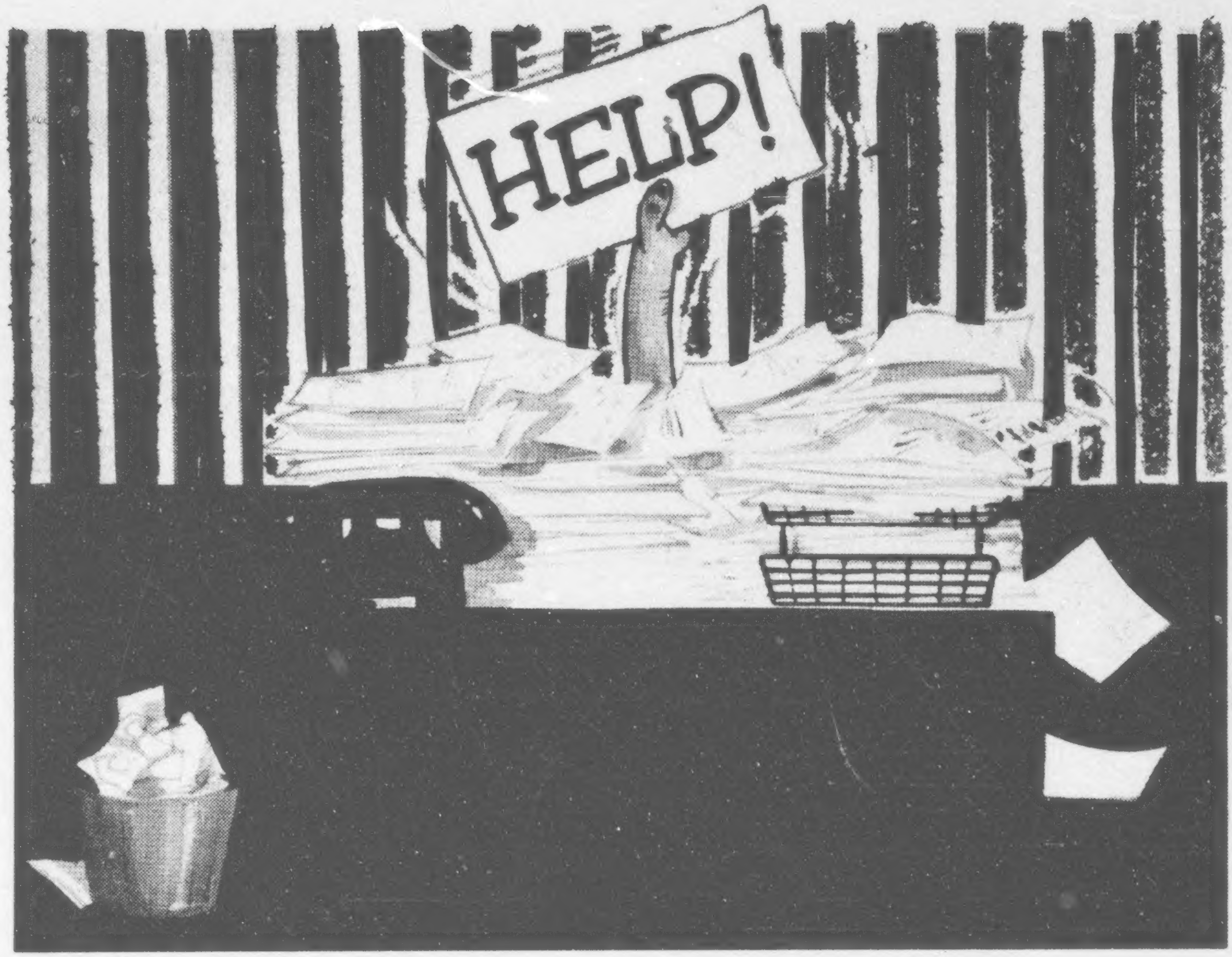
b. Eno Foundation, "Traffic Quarterly". Saugatuck, Connecticut

c. National Commission on Safety Education, "Safety".

d. National Safety Council, "Traffic Safety and Safety Education".

e. New Jersey State Safety Council, "Safety Briefs". 24 Branford Place, Newark, New Jersey.

f. New Jersey Driver and Safety Education Association, "N.J.D.S.E.A. News," 1 Hanover Road, Florham Park, N.J.


HELP!

Part 6. Appendix

APPENDIX A
CORRESPONDENCE WITH PARENTS

1. Letter Requesting Parental Consent

Dear ______________________________

I am pleased to inform you that ______________________ is
(Student's name)

eligable to take part in the Behind-the-wheel phase of our Driver Education Program. This course includes ______ hours of actual driving instruction and approximately ______ hours of observing others in the car.

The vehicles to be used are equipped with dual-controls and safety restraints to provide maximum safety. They are completely insured.

In the few hours that are spent with your (son) (daughter) it would be difficult to prepare an expert driver. However, with your supplemental supervision we hope to develop the attitudes and skills that are essential to safe driving.

We will inform you of your (son's) (daughter's) progress during the course and will be happy to answer any questions you may have concerning the program.

Kindly complete the enclosed form indicating your consent or disapproval and mail it directly to the Principal's Office.

Very truly yours,

____
Principal

2. Parental Consent Form

Dear Mr. Principal,

We hereby (give) (do not give) our consent to have

______________________ take the behind-the-wheel phase of the
(Student's name)

Driver Education Program at ______________________

High School.

We understand that the time allotted for this instruction is not adequate to prepare an expert driver, and we will follow your instructor's recommendations to improve any inadequacies that our (son) (daughter) may have. We also accept the fact that the school will not be responsible for any driving that the students do outside the school program.

______________ Father's Signature ______ Date ______________ Mother's Signature ______ Date

______________ Guardian's Signature ______ Date

3. Student Progress Report

Dear ______________________________

Your (son) (daughter) has received supervised instruction in the fundamental skills of the driving task. We feel that home practice in the areas checked below will be beneficial in further helping to develop the driving skills necessary for the safe, efficient operation of a motor vehicle. Kindly limit the home practice to the skills checked below.

— backing the car
— smooth starts and stops
— right and left turns
— driving in proper lane
— lane changing
— parking
— congested traffic driving
— expressway driving
— country highway driving
—overtaking and passing
—driving at night
—driving under adverse conditions
—development of concentration
—development of confidence
—over-confident
—speed control
—efficient visual control
—traffic control observation

Subsequent reports of instruction will be sent to you as your (son) (daughter) progresses through the various levels of practice driving.

Yours truly,

____
Instructor

4. Final Report to Parents

Dear ______________________________

Your (son) (daughter) has satisfactorily completed our Driver and Traffic Safety Education course. Although this course has taught the participants the skills, knowledge, judgement and attitudes essential to safe and skillful driving, most students still require additional hours of supervised practice and experience before they can become efficient drivers. You, as parents, can and must help us by continuing the Driver Education course at home. We hope that you will work with your (son) (daughter) on their weaknesses, and help them to become more mature drivers.

It is not recommended that you give your (son) (daughter) free rein in the use of a car immediately after completing the course. We definitely feel that (he) (she) needs additional practice in (1) Night Driving, (2) Heavy Traffic Driving and (3) Driving Under Adverse Conditions.

When you consider that your child is sufficiently competent as a driver to be entrusted with your car, we suggest that you, personally, take (him) (her) for (his) (her) license examination conducted by the Driver License Bureau of the Division of Motor Vehicles.

If you have any questions on any phase of driving, we will be most happy to meet with you at your convenience if you will contact the high school. Remember Driver Education does not stop in the school, and it is up to you, as parents to help us try to lower the growing fatality rate.

Very truly yours,

____
Instructor

APPENDIX B
TIME ALLOTMENT GUIDELINES

The following schedules are presented to indicate bases for superior programs, excellent programs, and minimum programs. Programs involving forty-eight students and sixteen students are presented as guides to follow. Other numerical enrollments may be adjusted from one of these schedules to fit local demand.

These programs may be easily scheduled in the summer as each student may be involved several hours per day. The instructor should not be involved in instructional activities more than six hours per day. The following maximim time schedules for pupils should be observed in summer scheduling or in after-school and Saturday scheduling:

Classroom	2 hours daily
Simulator	1 hour daily
Range	1 hour daily
Street and Highway	1 hour daily

Semester programs present problems in schools in which no study halls are scheduled. In many schools some type of team teaching involving two or more teachers is a possible solution to this scheduling. Block scheduling for the students in driver education may be required if economical use of the teachers' time is to be realized. Scheduling a class at a given period for an entire school year is another solution.

A. Schedule for 48 Students

1. SUPERIOR — Student involvement in 90 or more periods of learning activities.

	Student Time	Instructor's Time
Classroom[3]	66 hours[1]	66 hours
Simulator	12 hours (16 units)	36 hours
Range	6 hours (12 cars)	24 hours
Street and Highway	6 hours[2]	144 hours
Total	90 hours	270 hours

[1] Includes 15 to 18 hours multimedia.

[2] Two students in car; 3 hours driving and 3 hours observing.

[3] Multimedia type instruction is suggested for enrichment of program consisting of 15 hours or more.

2. EXCELLENT — Meets requirements for one-half unit of credit.

PLAN I	Student Time	Instructor's Time
Classroom[1]	48 hours	48 hours
Simulator	12 hours (16 units)	36 hours
Range	6 hours (12 cars)	24 hours
Street and Highway	4 hours[2]	96 hours
Total	70 hours	204 hours

[1] Multimedia type instruction is suggested for enrichment of program consisting of 15 hours or more.

[2] Two students in car; 2 hours driving and 2 hours observing.

PLAN II	Student Time	Instructor's Time
Classroom[1]	48 hours	48 hours
Simulator	12 hours (16 units)	36 hours
Street and Highway	12 hours[2]	144 hours
Total	72 hours	228 hours

[1] Multimedia type instruction is suggested for enrichment of program consisting of 15 hours or more.

[2] Four students in car; 3 hours driving and 9 hours observing.

PLAN III	Student Time	Instructor's Time
Classroom[1]	48 hours	48 hours
Range	12 hours (12 cars)	24 hours
Street and Highway	12 hours[2]	144 hours
Total	72 hours	216 hours

[1] Multimedia type instruction is suggested for enrichment of program consisting of 15 hours or more.

[2] Four students in car; 3 hours driving and 9 hours observing.

PLAN IV	Student Time	Instructor's Time
Classroom[1]	90 hours	90 hours
Street and Highway	12 hours[2]	288 hours
Total	102 hours	378 hours

[1] Multimedia type instruction is suggested for enrichment of program consisting of 15 hours or more.

[2] Two students in car; 6 hours driving and 6 hours observing.

3. MINIMUM — Meets minimum requirements for reimbursement and one-half unit of credit under January 1, 1970, regulations.

	Student Time	Instructor's Time
Classroom	44 hours	44 hours
Street and Highway	24 hours[1]	288 hours
Total	68 hours	328 hours

[1] Four students in car; 6 hours driving and 18 hours observing.

4. MINIMUM — Meets minimum requirements for reimbursement and one-fourth unit of credit under January 1, 1970 regulation.

	Student Time	Instructor's Time
Classroom	30 hours	30 hours
Street and Highway	24 hours[1]	288 hours
Total	54 hours	318 hours

[1] Four students in car; 6 hours driving and 18 hours observing.

B. Schedule for 16 Students

1. SUPERIOR

	Student Time	Instructor's Time
Classroom	66 hours	66 hours
Simulator	12 hours (16 units)	12 hours
Range	6 hours (8 cars)	12 hours
Street and Highway	6 hours[1]	48 hours
Total	90 hours	138 hours

[1] Two students in car; 3 hours driving and 3 hours observing.

2. EXCELLENT

PLAN I	Student Time	Instructor's Time
Classroom	48 hours	48 hours
Simulator	12 hours (16 units)	12 hours
Range	6 hours (8 cars)	12 hours
Street and Highway	4 hours[1]	32 hours
Total	70 hours	104 hours

[1] Two students in car; 2 hours driving and 2 hours observing.

PLAN II	Student Time	Instructor's Time
Classroom	48 hours	48 hours
Simulator	12 hours (16 units)	12 hours
Street and Highway	12 hours[1]	48 hours
Total	72 hours	108 hours

[1] Four students in car; 3 hours driving and 9 hours observing.

PLAN III	Student Time	Instructor's Time
Classroom	48 hours	48 hours
Range	6 hours (8 cars)	12 hours
Street and Highway	12 hours[1]	48 hours
Total	66 hours	108 hours

[1] Four students in car; 3 hours driving and 9 hours observing.

PLAN IV	Student Time	Instructor's Time
Classroom	90 hours	90 hours
Street and Highway	12 hours[1]	96 hours
Total	102 hours	186 hours

[1] Two students in car; 6 hours driving and 6 hours observing.

3. MINIMUM — Meets minimum requirements for reimbursement and one-half unit of credit under January 1, 1970, regulations.

	Student Time	Instructor's Time
Classroom	44 hours	44 hours
Street and Highway	24 hours[1]	96 hours
Total	68 hours	140 hours

[1] Four students in car; 6 hours driving and 18 hours observing.

4. MINIMUM — Meets minimum requirements for reimbursement and one-fourth unit of credit under January 1, 1970, regulations.

	Student Time	Instructor's Time
Classroom	30 hours	30 hours
Street and Highway	24 hours[1]	96 hours
Total	54 hours	126 hours

[1] Four students in car; 6 hours driving and 18 hours observing.

APPENDIX C

Form 175
(Revised 5-73-5, M)

STATE OF KANSAS
KANSAS STATE BOARD OF EDUCATION
DEPARTMENT OF EDUCATION
Kansas State Education Building
120 East Tenth, Topeka, Kansas 66612

AGREEMENT FOR DRIVER EDUCATION CAR
(1973 House Bill 1519)

This Agreement is made and entered in triplicate by and between Unified School District No. __________, __________________ (City), ______________ (County), Kansas, party of the first part, but for convenience hereinafter referred to as "District"; ______________________ (Name of car agency), ______________ (City), Kansas, party of the second part, but for convenience hereinafter referred to as "Dealer"; and the State Department of Education, party of the third part, which shall be referred to hereinafter as "Department"; **Witnesseth:**

That copies of this agreement shall go to District, Dealer and Department.

That Dealer agrees to provide District, for its exclusive use, a driver training motor vehicle for the period stated in this agreement.

That in consideration for the use of the driver training car of Dealer, District agrees to do and perform the following, to-wit:

1. Conduct a Driver Education course which meets the requirements of Department.
2. Provide an instructor who has been certified by Department.
3. Use the car only for instruction in Driver Education, except that special arrangements may be made for housing.
4. Return the car promptly to Dealer on expiration of agreement.
5. Pay for all servicing and repairs necessary to keep the car in the same condition as received except for normal wear.
6. Affix the driver education decal to registration plate as provided by law.
7. Store car in a suitable garage when not in use, if requested by Dealer.
8. Have car serviced and repaired at Dealer's garage or one agreeable to Dealer.
9. Provide for adequate fire, theft, comprehensive and liability insurance on car. Liability insurance should provide for a minimum coverage of $100,000 to $300,000 for Public Liability, $25,000 for property damage, and $50.00 deductible insurance. (Note any changes in amount of insurance or obligations of District or Dealer.)
10. Attach driver education sign on top, rear or side of vehicle with not less than two (2) inch letters, ¼ inch wide, signifying "Student Driver" or "Driver Education Car".

That the period of time for this agreement shall be from the ____ day of __________, 19 _____ to the ____ day __________, 19 ___.

Make of Vehicle	Model	Serial No.
__________	__________	________________
__________	__________	________________
__________	__________	________________
__________	__________	________________

(List additional cars on back of this form.)

In Witnesseth Whereof, this agreement is signed and dated this ____ day of __________, 19 ___.

Dealer
By: ______________________________
(Signature)
Title ______________________________

District
By: ______________________________
(Signature)
Title ______________________________

(The school district and the automobile dealer should each retain a signed copy of this form. The third copy---signed by both parties---must be filed with the Kansas State Department of Education, 120 East 10th Street, Topeka, Kansas 66612.)

2. Application For Reimbursement for Driver Education.

Form No. 176

KANSAS STATE DEPARTMENT OF EDUCATION

Topeka, Kansas 66612

APPLICATION FOR REIMBURSEMENT FOR DRIVER EDUCATION PROGRAM

School____________________ District No.__________ County__________

Address____________________

Total number of driver education students for which this school is eligible to receive reimbursement. (Students have participated in 30 hours classroom instruction and an average minimum of 6 hours behind-the-wheel driving and have participated in the course between July 1, 1971 and June 30, 1972.) (Report all 1971 summer school students who completed program after June 30, 1971.)__________

Names of teachers of driver education__________, __________,

__________, __________, __________, __________,

Have all teachers of driver education met requirements necessary for this school to be eligible for reimbursement?__________

Are fees collected and retained for participation in summer driver education program?__________ School year__________

Amount for students__________ Amount for adults__________

On Form # 176-A list all students regularly enrolled in this school who have participated in the driver education course between July 1, 1971 and June 30, 1972.

On Form # 176-B list all students regularly enrolled in another school who have participated in the driver education course between July 1, 1971 and June 30, 1972, under supervision of this school.

I hereby certify that the above statements are true and correct.

Signed and sworn before me this______day of__________19____.

____________________ ____________________

Notary Public Superintendent or Principal of School

My Commission expires__________

Do not write below this line.

For use of State Department of Education.

Number of students for which this school is eligible to receive reimbursement__________

Amount of Reimbursement $__________

Approved for Payment____________________ ____________________

Director of State Program Director, Division of Finance

Date____________________

(Complete four copies. Keep one for your files. Send three to the chief school administrator of the district who will file one and send two to the State Department of Education.)

33-0833-8—21-40 4-71-6M

3. Summary of Students Participating in Driver Education Program

FORM # 176-A

SUMMARY OF STUDENTS PARTICIPATING IN DRIVER EDUCATION PROGRAM

July 1, 1973 to June 30, 1974

Summer—Fall—Spring
(Circle appropriate program)

School____________________ Address____________________

Name of Student	1 H. S. Grade 9-10-11-12	2 Date Enrolled Mo/D/Yr	3 Hours Classroom	4 *Hours Behind Wheel	5 Hours Obsvd. Driving	6 **Hours Simul. Exper.	7 ***Hrs. Driving Range	8 Date Completed Mo/D/Yr	9 Unit of Credit	10 Combined Total Hrs. of 4-6-7
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
16.										
17.										
18.										
19.										
20.										
21.										
22.										
23.										
24.										
TOTAL	XXXX	XXXX						XXXX	XXXX	

* Total hours of experience behind the wheel of the driver education car.

** Use of Simulators. Enter total hours simulator experience. For evaluation purposes four hours will be credited as equivalent to 1 hour actual driving experience.

*** Hours Driving Range. Enter total hours. For evaluation purposes 2 hours will be credited as equivalent to one hour actual driving experience.

(The instructor's records and office records shall be retained by the school until audited by the State Department of Education.)

4. Summary of Students Participating in Driver Education Program Who Were Regularly Enrolled in Another Accredited High School.

Form # 176-B

SUMMARY OF STUDENTS PARTICIPATING IN DRIVER EDUCATION PROGRAM WHO WERE REGULARLY ENROLLED IN ANOTHER ACCREDITED HIGH SCHOOL

July 1, 197__ to June 30, 197__

School reporting____________________ Address____________________

School in which these students were regularly enrolled____________________

Name of Student	H. S. Grade 9-10-11-12	Date Enrolled	Hours Classroom	*Hours Behind Wheel	Hours Obsvd. Driving	**Hours Simul. Exper.	***Hrs. Driving Range	Date Completed	Unit of Credit
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									
21.									
22.									
TOTAL	XXXX	XXXX						XXXX	XXXX

* Total hours of experience behind the wheel of the driver education car.

** Use of Simulators. Enter total hours simulator experience. For evaluation purposes four hours will be credited as equivalent to 1 hour actual driving experience.

*** Hours Driving Range. Enter total hours. For evaluation purposes 2 hours will be credited as equivalent to one hour actual driving experience.

(The instructor's records and office records shall be retained by the school until audited by the State Department of Education.)

[illegible] [illegible]

5. Preliminary Driver Education Program Report (Academic Year)

Kansas State Department of Education

Kansas State Education Building
120 East 10th Street Topeka, Kansas 66612

Division of Instructional Services

Form 176-C

Please Complete and Return Immediately!
Preliminary Driver Education Program Report

Unified Dist.______ School Year 197___-7___

School ______________________ Address ______________________ Phone No. ______________

Reported By ____ Date ______________________

Instructors: (1) ____
Name Driver's License No. Social Security No.

____
Name (List add'l. instructors on back) Driver's License No. Social Security No.

No. of instructors meeting July 1, 1967, requirements ______ No. of instructors qualified by prior experience __________

No. of driver education conferences to be attended by each instructor.

Instructors' Schedule: Enter **Totals for all Instructors** including both semesters in the totals. (To be completed by June 30, 197__

Total No. of Students (Both Sem.)	Total No of Classes (Both Sem.)	Total Hrs. in Classroom (30-90 x No. Classes)	Total Hrs. in Car (3-6 x No. Students)	Total Hrs. on Range (2-6 x No. Students/No. Cars)	Total Hrs. in Simulation (4-12xNo. Students/No. Simulators)

Students: Credit to be granted______unit. Is driver education required______________________

*Is tuition charged?__________ Amount per pupil______________________

Each student— 197___-7___School Term
Hours

Classroom instruction .... ______________________
Behind-the-wheel instruction (average) .... ______________________
Observed driving .... ______________________
Simulated experience .... ______________________
Multi-car range (behind-the-wheel driving) .... ______________________

Enrollment: Total number of students______________________

Number from other schools enrolled: Completed by 6-30__________ (Inc. both sem.)

Number from this school enrolled: Completed by 6-30__________ (Inc. both sem.)

Does your driver education program meet all requirements for reimbursement as revised and published January 1, 1969?____

Adults: Are adults enrolled with students? Yes_____ No_____

Number of adults enrolled in driver education__________

Is driving car owned_____; loaned_____; rented_____?

Make of Car__________________ New_____ Used_____.

(If more than one car, give additional data on the back)

Make two copies of this report. Send the original to **School Safety Services**, State Department of Education, 120 East 10th, Topeka, Kansas 66612.

File the other copy with school records.

*Tuition may be charged for attendance at summer school only.

6. Preliminary Driver Education Program Report (Summer Session)

Kansas State Department of Education

Kansas State Education Building
120 East 10th Street Topeka, Kansas 66612

Division of Instructional Services

Form 176-C

reliminary Driver Education Program Report
Please Complete and Return Immediately!
Summer 197____

Unified District No.__________ School____ Date________________

Reported by ____ Phone ______________
(Area Code— No.)

Instructors:____
Name Driver's License No. Social Security No.

(2)____
Name Driver's License No. Social Security No.

(3)____
Name Driver's License No. Social Security No.

(List Additional Instructors on the Back)

Number of Instructors meeting July 1, 1967 requirements__________.

Number of Instructors qualified by prior experience______________.

Instructors' Schedule: Enter **Totals for all Instructors.**

Total No. of Students	Total No of Classes	Total Hrs. in Classroom (30-90 x No. classes)	Total Hrs. in Car (3-6 x No. Students)	Total Hrs. on Range (2-6 x No. Students/No. Car)	Total Hrs. in Simulation (4-12xNo. Students/No. Simulators)

Students: Credit to be granted ______unit. Is Driver Education required? Yes______ No______

Is a fee charged? Yes______ No______ Amount per student $______________

	Summer 197______ Completed by 6-30	Summer 197_____ Completed after 7-1
Scheduled time for each student:		
Classroom instruction		
Behind-the-wheel instruction (Average)		
Observed driving		
Simulated experience		
Multi-vehicle range (behind-the-wheel dr.)		

Enrollment: Total number of students______

Number from other schools enrolled: Completed by 6-30______ Completed after 7-1______

Number from this school enrolled: Completed by 6-30______ Completed after 7-1______

Does your driver education program meet all requirements for reimbursement as revised and published January 1, 1969?_____

Adults: Are adults enrolled with students? Yes______ No______

Number enrolled in driver education________

Is driving car owned______; loaned______; rented______?

Make of car____________________ New______ rented______?

(If more than one car, give additional data on the back)

Make two copies of this report. Send the original to **School Safety Services**, State Department of Education, 120 East 10th, Topeka, Kansas 66612.

7. Request For Approval of Enrollment of Special in Driver Education Program

Kansas State Department of Education

Kansas State Education Building
120 East 10th Street Topeka, Kansas 66612

Division of Instructional Services

Form 176-D

Request For Approval Of Enrollment Of Special Students in Driver Education Program

From_______________________________________ _______________________________________
School City and County

By_______________________________________ _______________________________________
Superintendent or Principal Date

The____________School requests approval by the State Department of Education of the enrollment of the following special students in the regular________ and or summer________driver education program for the school year 19____ to 19____

Name of Student	Date of Birth	Date for Enrollment	Anticipated Date of Completion	Anticipated Unit of Credit
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

For State Department of Education:

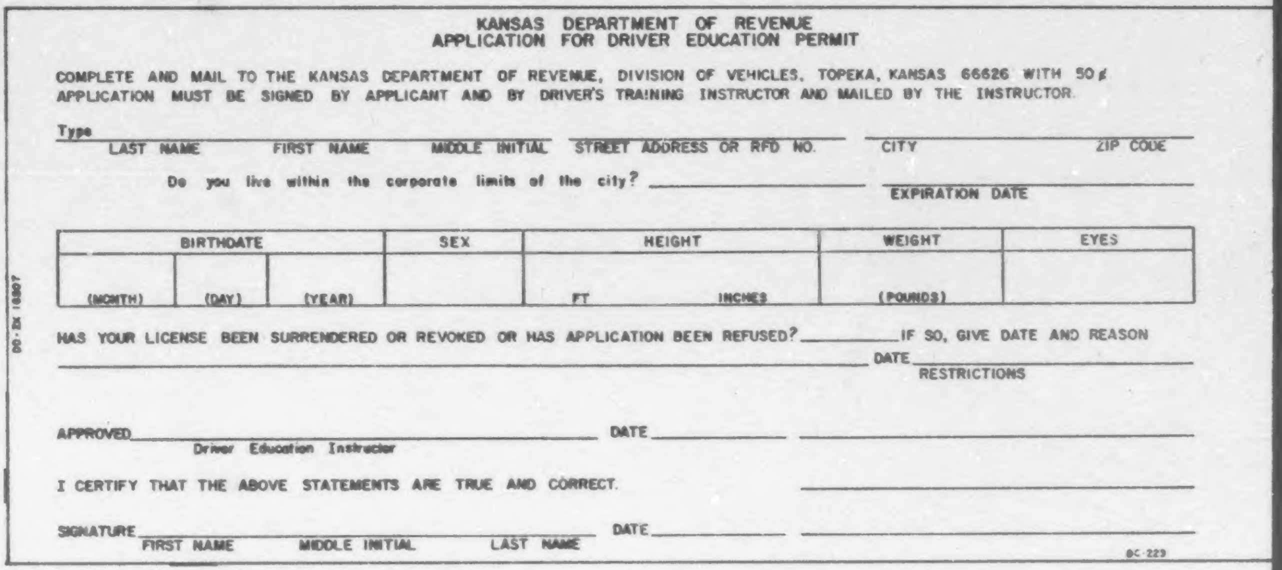
Approval Granted______, Denied______ Date____________________________

____
Driver Education Director

Complete two copies. Send both copies to the Department of Education for approval.

APPENDIX D
Division of Vehicles Forms

1. Application for Driver Education Permit



KANSAS DEPARTMENT OF REVENUE
APPLICATION FOR DRIVER EDUCATION PERMIT

COMPLETE AND MAIL TO THE KANSAS DEPARTMENT OF REVENUE, DIVISION OF VEHICLES, TOPEKA, KANSAS 66626 WITH 50¢
APPLICATION MUST BE SIGNED BY APPLICANT AND BY DRIVER'S TRAINING INSTRUCTOR AND MAILED BY THE INSTRUCTOR.

Type ______ LAST NAME FIRST NAME MIDDLE INITIAL ______ STREET ADDRESS OR RFD NO. ______ CITY ZIP CODE

Do you live within the corporate limits of the city? ______ ______ EXPIRATION DATE

BIRTHDATE			SEX	HEIGHT		WEIGHT	EYES
(MONTH)	(DAY)	(YEAR)		FT	INCHES	(POUNDS)	

HAS YOUR LICENSE BEEN SURRENDERED OR REVOKED OR HAS APPLICATION BEEN REFUSED? ______ IF SO, GIVE DATE AND REASON
______ DATE ______ RESTRICTIONS

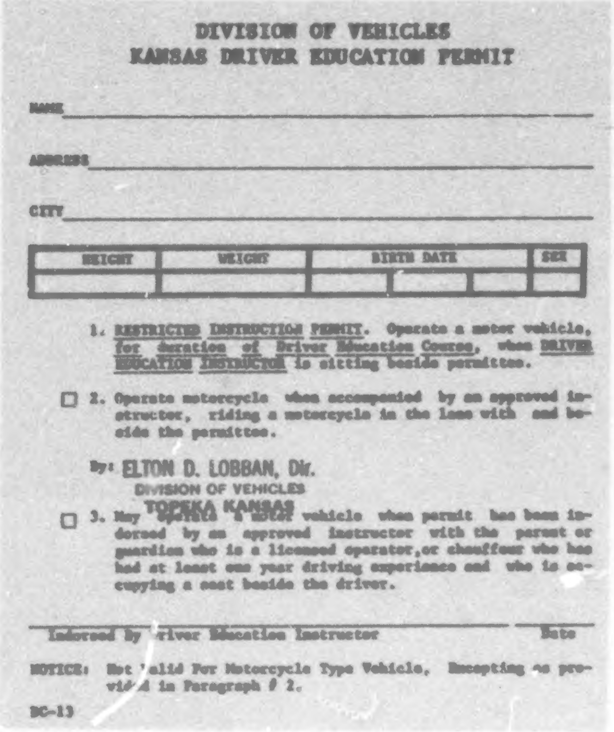
APPROVED ______ Driver Education Instructor DATE ______ ______

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT. ______

SIGNATURE ______ FIRST NAME MIDDLE INITIAL LAST NAME DATE ______ ______

DC-229

2. Driver Education Permit



DIVISION OF VEHICLES
KANSAS DRIVER EDUCATION PERMIT

NAME ______

ADDRESS ______

CITY ______

HEIGHT	WEIGHT	BIRTH DATE			SEX

1. RESTRICTED INSTRUCTION PERMIT. Operate a motor vehicle, for duration of Driver Education Course, when DRIVER EDUCATION INSTRUCTOR is sitting beside permittee.

☐ 2. Operate motorcycle when accompanied by an approved instructor, riding a motorcycle in the lane with and beside the permittee.

By: ELTON D. LOBBAN, Dir.
DIVISION OF VEHICLES
TOPEKA KANSAS

☐ 3. May operate a motor vehicle when permit has been indorsed by an approved instructor with the parent or guardian who is a licensed operator, or chauffeur who has had at least one year driving experience and who is occupying a seat beside the driver.

______ Indorsed By Driver Education Instructor ______ Date

NOTICE: Not Valid For Motorcycle Type Vehicle, Excepting as provided in Paragraph # 2.

DC-13

Securing Instruction Permits: The driver education instructor is to make application to the Division of Vehicles using the DC-229 form. On receipt of the completed application and the required fees, the department will forward the correct number of forms, DC-13, to the instructor to be filled out by the school officials and **HELD BY THEM, not the student**. This is not only a permit to drive when taking the actual driving instructions, but a certificate of completion of the course; and, should be maintained in such a condition, as to be legible when it is presented to the driver license examiner for a drivers license.

Driving with Parents While in Driver Education Class: It is suggested that a learner pass an in-car and a rules of the road examination before being issued the instruction permit.

DC-13 form in his possession when students are driving, and (3(Completed DC-1 and DC-13 must be given to the student when the driver education program is successfully completed and credit is granted.

When a student has been granted credit in a driver education class, the school administrator shall issue Form DC-1, "Certificate of Completion." The DC-1 form must be properly completed from data on the school's records. The "Kansas Driver Education Certificate," Form 176-E, should be issued at the same time.

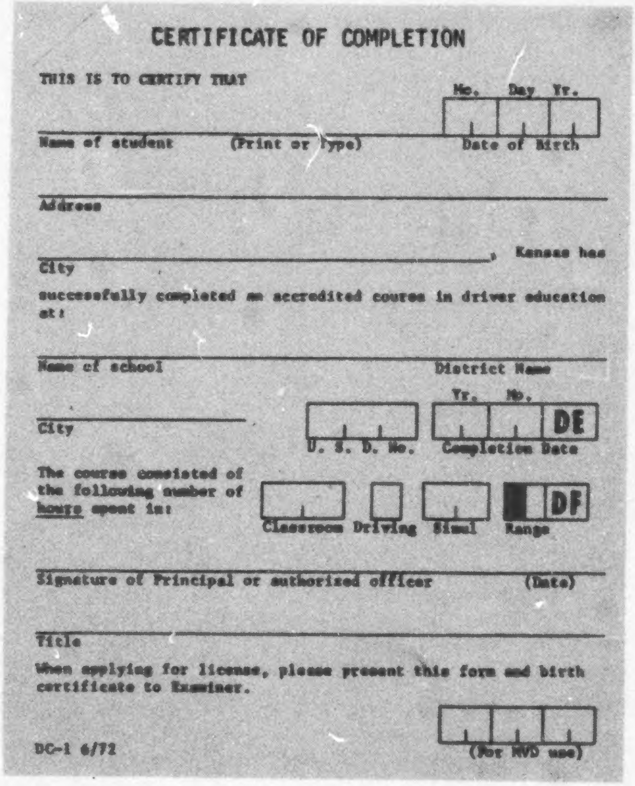
The student should be instructed to immediately present the DC-1 form to the license examiner for licensing to operate a motor vehicle. The DC-1 form is not a motor vehicle license. The student must be accompanied by a parent or legal guardian, if under age 16, have a birth certificate, his instruction permit, and social security number. The examiner will check his vision. If the vision test and birth certificate are satisfactory, the examiner will collect the DC-1 form and the basic fee will be $6.00 for a period of four years.

No further testing is required.

The license to operate a motor vehicle will be sent to the operator by the Division of Vehicles, Department of Revenue, Topeka, Kansas.

Please note form required—Birth Certificate, and DC-1 (Social Security Number recommended).

3. Certificate of Completion



CERTIFICATE OF COMPLETION

THIS IS TO CERTIFY THAT

Name of student (Print or type) — Date of Birth: Mo. Day Yr.

Address

City, Kansas has

successfully completed an accredited course in driver education at:

Name of school — District Name

City — U. S. D. No. — Completion Date: Yr. Mo. DE

The course consisted of the following number of hours spent in: Classroom Driving Simul Range DF

Signature of Principal or authorized officer (Date)

Title

When applying for license, please present this form and birth certificate to Examiner.

DC-1 6/72 — (For MVD use)

APPENDIX E.
LEGISLATION, RULES AND REGULATIONS

1. Legislation

K.S.A. 1972 Supp. 8-267. Disposition of moneys. All moneys received under this act shall be paid over by the secretary of revenue to the state treasurer who shall credit fifty percent of all moneys so received from operators' licenses and twenty-five percent of all moneys so received from chauffeurs licenses to a special fund, which is hereby created and shall be known as the "state safety fund" to be distributed to provide funds for driver training courses in the schools of Kansas and for the administration of this act, as the legislature shall provide. The state treasurer shall credit the balance of all moneys received under this act to the state highway fund.

K.S.A. 1972 Supp. 8-272. State safety fund distribution; basis for school district entitlements; proration of fund, when. Any school accredited by the state board of education conducting an approved course in driver training shall be entitled to participate in the state safety fund created by K.S.A. 8-267. Beginning in June, 1960, and in June of each year thereafter, the superintendent of each school district shall report to the state board of education the number of pupils who have been in attendance for a complete driver training course conducted by such school during the past school year. Nine hundred thousand dollars ($900,000) from the state safety fund in the state treasury shall be distributed to the respective schools on order of the state board of education in the ratio that the number of pupils in each school in attendance for such complete course. If the amount appropriated in any year from the state safety fund shall be insufficient to pay the full amount each school is entitled to receive under this section, then the entire amount appropriated for such year shall be prorated among all schools in proportion to the amount each school is entitled to receive. No moneys in the state safety fund shall be used for any purpose other than that specified in this section or for the support of driver improvement programs. The state board of education shall prescribe all forms necessary for reporting in connection with this act. The funds shall be distributed to the respective schools on or before October 1 each year.

K.S.A. 1973 Supp. 1519. Driver Education Vehicle Usage.

Section 1. As used in this act:

(a) "Driver training motor vehicle" means an automobile or motorcycle acquired by a board pursuant to an agreement with a motor vehicle manufacturer or dealer for use in driver training courses; but does not include within its meaning any motor vehicle which is rented, leased, or owned by any school district, nonpublic school or community junior college.

(b) "Board" means the board of education of a school district, the governing authority of any nonpublic school offering any of grades kindergarten through 12 or the board of trustees of any community junior college.

(c) "Multi-vehicle driving range" means an off street area in which several motor vehicles are used simultaneously to provide (1) laboratory instruction under the supervision of one or more instructors, or (2) the simultaneous education of several student drivers under the supervision of one instructor.

(d) "Division" means the division of vehicles of the department of revenue.

Section 2.

(a) Any board may enter into an agreement with any motor vehicle manufacturer or dealer for the purpose of obtaining driver training motor vehciles from such manufacturer or dealer for use in driver training courses.

(b) Every registration plate issued by a county treasurer for a driver training motor vehicle shall be accompanied by a decal with the words "Driver Education" appearing thereon, which decal shall be affixed to said plate.

(c) Any driver training motor vehicle may have the name of the manufacturer or dealer of any such motor vehicle prominently displayed thereon in letters not more than four (4) inches in height for advertising purposes.

Section 3.

(a) The state board of education may adopt rules and regulations for the administration of this act.

(b) The state department of education shall, on or before July 1, 1974, and on or before July 1 of each succeeding year, prepare a list of schools accredited by the state board of education and conducting an approved course in driver training. Such list shall be prepared from the reports required under K.S.A. Supp. 8-272 and shall be sent to the division and other governmental agencies having need thereof.

(c) Any board desiring to conduct driver training courses must first have such courses approved by the state department of education and shall then be eligible to enter into agreements for driver training motor vehicles.

Section 4. No school shall have more than one (1) driver training motor vehicle for each certified instructor teaching in a driver training program unless there is an approved program using a multi-vehicle range. Each such instructor must have an assignment in driver training. In the event there is an approved program in multi-vehicle range instruction, the state department of education shall certify the number of cars needed.

Section 5. No person shall use a driver training motor vehicle except during driver training course instruction. Any person using a driver training motor vehicle for purposes other than for such instruction shall be guilty of a misdemeanor, punishable by a fine not exceeding fifty dollars ($50.00) for the first offense, and on subsequent offenses by a fine not exceeding five hundred dollars ($500.00). No person shall be in violation of this act in the event he is required by the dealer or a school administrator to house or otherwise protect any such vehicle at his home or other facility.

Section 6. Any employee of any educational institution which participates in the state safety fund who officially sanctions the use of driver training motor vehicles in violation of this act shall have his contract suspended for the remainder of the term for which said contract was made and two (2) or more violations under this section by any employee of an educational institution in any one (1) year shall result in the loss of subsequent participation in such fund by such educational institution.

Section 7. This act shall take effect and be in force from and after its publication in the statute book.

2. Rules and Regulations

Eligible Schools: To be eligible for reimbursement the school shall be accredited by the State Board of Education as a public secondary school

Special Schools: Schools accredited by the State Board of Education as special schools may develop a driver education program with the approval of the State Board of Education. Pupils in such programs must meet the same requirements for completion of the driver education program as pupils in accredited secondary schools.

Hours of Instruction: The total time provided for classroom instruction shall be at least thirty hours, and the amount of actual behind-the-wheel driving instruction shall not be less than an average of six clock hours for each student.

Qualifications of Instructors:

(a) Instructors of driver education shall hold certificates valid for teaching in the secondary schools of Kansas.

(b) They must present to the employing school evidence of good character, have a valid operators license and a satisfactory driving record.

(c) Effective July 1, 1967, and thereafter, they must have completed special training in driver education as follows: Driver education, six semester hours; general safety, three semester hours; psychology, three semester hours; and six semester hours selected from such courses as visual education, auto mechanics, sociology, and other courses dealing with human relations, such as problems in American democracy, law enforcement, traffic problems and court procedures. An instructor who meets Kansas requirements for teaching driver education prior to or during the 1966-67 term of school remains eligible as a teacher of driver education provided the teacher remains in the same position and school; provided he has been employed to teach driver education for one or more terms during the past six years.

Reimbursement: Reimbursement shall be based on the number of high school pupils completing attendance in an approved course between July 1 and June 30 of the school year completed. Distribution of funds will be made in October of each year for the preceding school year ending on June 30. Classroom instruction and behind-the-wheel driving must both be completed within the same 12-month period. For any district that has a free loan car to receive reimbursement, it must have on file with the State Department of Education a copy of the valid and subsisting Agreement for Driver Education Car between the district and dealer for each car used in the driver education programs of the district.

Credit for the Course: To be eligible for reimbursement under the driver education program, schools must grant credit for the subject. A school meeting only the minimum requirements as outlined under "hours of instruction", shall grant no more than one-fourth Carnegie Unit of credit to a pupil completing the prescribed work. Schools that offer a complete semester of instruction that meets minimum requirements and provides ninety full periods for every pupil shall grant one-half unit of credit. The full semester is recommended.

Year-Around Instruction: Any school may offer an approved course during the regular school term, the summer term, or after-school periods so long as the instruction is administrated and supervised as an integral part of the school program.

Eligible Pupils: Pupils to be considered eligible under this program shall be regularly enrolled in an accredited high school as at least a three-fourth time student and in one of the grades nine to twelve inclusive. In the summer program the eligibility of a pupil will be determined by his status during the regular term of the high school in which he has been enrolled.

Special Students: Pupils may be enrolled in any driver education program as special students with the approval of the Commissioner of Education. Such students must be eligible for an instruction permit, must be under 21 years of age, and must not have graduated from high school.

Instruction Permits: To qualify for behind-the-wheel training, any pupil must first obtain a Kansas Instruction Permit for limited driving or have a valid Kansas driver's license.

Automobile Used As Trainer:

(a) Loan Vehicles—Each school district shall have no more than one loan vehicle per driver education instructor who has active assignment in driver education.

(b) Any automobile used for driver education purposes shall carry a special designation visible from the rear either as a printed sign or a decalcomania of sufficient size to be read from a considerable distance and with the following wording:

DRIVER EDUCATION CAR
or
STUDENT DRIVER
(name of school)

(c) All cars used for driver education purposes shall have dual controls as a safety measure.

Use of Simulators:

(a) A maximum of twelve hours of pupil experience in a state-approved driving simulator will be accepted in lieu of three hours of behind-the-wheel instruction, using a ratio of four hours of simulator experience to one hour of actual driving.

(b) The teacher in charge of simulator instruction shall have the qualifications equivalent to that required for teaching regular driver education classes.

Use of Multiple-Car Driving Ranges:

(a) A maximum of six hours behind-the-wheel driving time on driving ranges in a multiple-car plan approved by the State Department of Education will be accepted in lieu of three hours behind-the-wheel instruction, using the ratio of two hours driving on the range to one hour of driving with a certified instructor in the car.

(b) The teacher or teachers in charge of driving range instruction shall have qualification equivalent to that required for teaching regular driver education classes.

(c) If the district has one or more multiple vehicle ranges, the number of vehicles to be used thereon will be certified by the State Department of Education.

Use of Simulators and Multiple-Car Driving Ranges Combined:

(a) Plans for using combinations of simulators and multiple-car driving ranges shall be approved by the State Board of Education.

(b) There shall be a minimum of two hours behind-the-wheel driving by the student in street and highway traffic conditions when combinations of simulators and multiple-car driving plans are being used.

Reports: Schools participating in state reimbursement for driver education shall submit reports indicating the number of pupils completing attendance in the course and other information necessary for state approval of the program. Such reports will be due at the office of the State Commissioner of Education on July 10 for the school year immediately closed.

APPENDIX F

SOURCES OF EQUIPMENT

Sources of Equipment

Sources	**Description**
1. Dual Controls	
a. American Automobile Assoc. 1712 6th Street, N. W. Washington, D. C.	Standard, Automatic, Special Hydraulic.
b. Auto Brake Control Co. 900 N. Vermont Los Angeles, California	Standard, Automatic, Special custom type for suspended pedals.
c. Associated Engineering Service 23-19 122nd Street College Point, New York	Automatic only.
d. Funk Forging Company 1633 Fifth Street Chicago Heights, Illinois	Standard, Automatic.
e. Portable Dual Control Inc. 5133 Grand River Avenue Detroit, Michigan	Standard, Automatic.
f. Stromberg-Hydraulic Brake and Coupling Company 5453 North West Highway Chicago, Illinois	Hydraulic only.
2. Magnetic Boards, etc.	
a. American Automobile Association 1712 6th Street N.W. Washington, D. C.	
b. Educational Device Company Dallas, Texas	
c. Lake Automotive Products Company 1008 North Marion Street Oak Park, Illinois	
d. Magno-Sof-T-Board Emigsville, Pennsylvania	
3. Markers	
a. American Automobile Assoc.	Stanchions
b. Davis and Box Company 3549 Bryn Mawr Dallas, Texas	Training course, marker flags.
c. Lake Automotive Products Co.	Stanchions

d.	Radiator Speciality Co. Charlotte, North Carolina	Rubber & Plastic Cones.

4. Psychophysical Tests

a.	American Automobile Assoc.	Driver Evaluator, etc.
b.	Bausch & Lomb Optical Co. 18 South Michigan Avenue Chicago, Illinois	Ortho-Rating Vision Tests.
c.	Keystone View Co. Mindville, Pennsylvania	Keystone Telebinocular.
d.	Porto-Clinic Instruments Inc. 298 Broadway New York, New York	General testing apparatus.

5. Signs and Decals

a.	American Automobile Assoc.	Signs and decals.
b.	Bumpa-Tel Sign Company Box 181 Mounds, Illinois	Bumper signs.
c.	Lake Automotive Products Co.	Signs and decals.
d.	Miro-Flex Company Inc. P. O. Box 514 Wichita, Kansas 67201	Roadway signs.

6. Simulators

a.	American Automobile Assoc.	Auto-trainer
b.	Link Group Precision Systems, Inc. Binghamton, N. Y. 13902	L-210
c.	Imperial Equipment P. O. Box 1190 Lafayette, Indiana 47902	

ADDENDUM

MOTORCYCLE SAFETY EDUCATION

Contents

ORGANIZATION AND ADMINISTRATION PART 1

CURRICULUM PART 2

ON-CYCLE INSTRUCTION PART 3

Part 1. Organization and Administration

1.0 DESIGNATION OF RESPONSIBILITY

Since the social and economic effects of motorcycle accidents in Kansas have emerged as a major problem, it is imperative that our secondary schools make a sincere attempt to help develop good behavioral patterns in prospective motorcycle operators. Studies indicate that the majority of causative factors in motorcycle accidents are the result of improper system usage by other vehicle operators. Our educational systems are vitally concerned with the proper development of motorcyclists so they can cope with other system users' mistakes.

It is recommended that each school administrator take a direct part and a personal interest in planning and administering a motorcycle safety program. The organization and administration of this program shall be based upon the general educational objectives formulated by the local school district.

If you expect to reduce teenage accidents, and accidents in general, our secondary schools must provide well-planned, well-directed and well-accepted motorcycle safety education programs.

2.0 THE COURSE

2.1 Course Approval

To have a course approved, the instructor(s) should take the following precautions before offering motorcycle safety education as a new course or as an extension to the driver education curriculum.

a. The instructor desiring to add motorcycle safety education to the high school curriculum should seek approval from all administrators and possibly the local board of education. In no case should the instructor inject the on-cycle phase without approval from his administrator(s).

b. School districts desiring to add motorcycle safety education to the existing driver education curriculum should be reminded this is an addition and not something that can be injected into the thirty (30) classroom hourly requirement. Instruction that is advantageous to all highway users, such as braking, acceleration maneuvering capabilities of the motorcycle, should be intergrated into the regular driver education curriculum. However, instruction dealing with actual manipulation of controls, starting techniques, putting in motion, etc., should not be a part of the driver education curriculum unless it is beyond the basic thirty (30) hour classroom requirement.

c. The course should include both classroom and riding instruction, with the latter provided only to those students who have completed or are currently enrolled in the classroom phase of the program.

d. School districts desiring state reimbursement shall submit application for approval to School Safety Services, State Department of Education, 120 East Tenth, Topeka, Kansas 66612.

e. Riding instruction will not be given to students who are less than 14 years of age, and all students enrolled for such training shall have the required "Instruction Permit."

f. Arrangements will be made to secure the permission of parents or guardians before students are permitted to begin riding instruction. (See Appendix A.)

2.2 Time Allotments and Credits

The present trend is toward eight to ten hours of classroom instruction since it is extremely difficult for schools to allot classroom time over this allowance. The recommended time allotment for the curriculum presented in this guide is not based on a specific number of instructional periods, but instead on student fulfillment. However, eight to ten classroom periods and six (or more) hours of on-cycle instruction is generally considered an acceptable time allotment if preceded with a driver education course.

It is recommended that a school system schedule the course as a separate subject and grant credit allowance when approved by the State Department of Education. If scheduling problems necessitate offering the motorcycle safety education course as an extension of the driver education program, the time allotted may not be counted as part of the basic thirty and six program unless instruction deals with the coexistence of the motorcyclist.

2.3 Scheduling

No single formula has been developed to overcome all the difficulties which may be encountered in scheduling motorcycle safety education courses. Schedules vary from school to school, and there is no satisfactory pattern that will suit all schools. Some of the basic factors which should be considered in developing schedules include:

a. the type of program to be offered.

b. its relationship to the total school program.

c. number of students to be accommodated.

d. availability of students.

e. length of time per class period.

f. number of weeks per semester.

g. recommended requirements.

h. availability of qualified teachers and needed equipment.

Various studies indicate that it is desirable to have classroom and riding instruction taught concurrently during regular school hours. It is suggested that a separate course be offered during a concentrated term of two to four weeks. Naturally, the most effective programs are scheduled on a semester basis. However, those that operate as an extension to the driver education course are acceptable. Fragmented programs meeting only once a week for an extended period, for example, are less successful.

3.0 THE TEACHER

3.1 Qualifications

Before a school administrator hires or assigns someone to teach motorcycle safety education, he should consider that instruction in this field involves not only the teaching of skill, but the development of habits and acceptable patterns of behavior. Due to the seriousness of the outcome and because of the semi-technical, non-routine nature of this course, mediocre teachers have no place in the field.

In addition to the general abilities and competencies that are expected of all teachers in our public school system, teachers of motorcycle safety education should possess the following qualifications:

a. Sincere interest and adequate preparation and knowledge in the field of motorcycle safety education.

b. A valid Kansas driver's license with a satisfactory driving record, as indicated by the files of the Division of Vehicles and the National Driver Register.

c. At least one (1) year of riding experience.

d. A bachelor's degree from an accredited institution of higher education.

e. A certificate valid for teaching in the secondary schools of Kansas and authorizing the teaching of "Driver Education."

In addition to those qualifications listed above, it is also suggested the teacher complete a teacher preparation course in motorcycle safety education.

4.0 THE STUDENT

4.1 Learner's permit

The same permit is used as in the Driver Education Program. Refer to page three of this guide.

4.2 Eligibility

a. Records show that most young people in Kansas secure operators' licenses as soon as they reach the legal driving age or very shortly thereafter. Consequently, the course should be made available to all students when they approach or attain the minimum eligible licensing age, which is 14 years in Kansas.

b. It is recommended that the course be offered at the 9th grade level since most of the students are closely approaching the minimum legal driving age at the beginning of their freshman year or will have reached it prior to its completion. However, students should have the opportunity to receive this instruction at the appropriate age level regardless of their grade in school as long as they have completed a course in driver education.

c. Student selection should be governed by age, with those students who have already reached 16 having priority. The recommended procedure in this case is to maintain a current list of eligible students having completed a driver education course with the base age being 14 years.

d. Those students who have already been licensed should also have the opportunity to enroll in the course, if schedules permit. Studies indicate that young people who have taken part in a good driver education program will attain excellent results when enrolled in a motorcycle safety education course.

4.3 Special Equipment

The following equipment is essential for safe and injury-free participation by the students.

a. **Approved Z90.1 helmet for each rider**

b. **Heavy soled shoes (preferably boots)**

c. **Blue jeans or equivalent**

d. **Jacket or long sleeve shirt**

e. **Identification vest for on-street instruction**

5.0 THE MOTORCYCLE

5.1 Type

It is recommended that a late model, approximately 100cc street type motorcycle be used for motorcycle safety education. Experience has shown that better results can be obtained by using smaller cycles and gradually employing larger machines (up to 250cc). Once the fundamental skills of starting, steering, stopping, and the ability to shift gears have been mastered, larger cycles can be introduced. In the event that a school system has several motorcycles, a size variance (70-250 cc) can produce excellent results. The larger cycles are ideal for the instructor to teach from particularly during on-street instruction.

5.2 Procurement

A high school having a qualified teacher and an approved program usually can obtain a motorcycle from a local dealer without charge, except for maintenance cost, insurance and fuel.

Negotiations for the loan or lease of a motorcycle should be considered and discussed between the local dealer and the school district. Application forms for securing vehicles are included in the appendix of this guide. (See Appendix B-1).

Under the lease plan, schools pay the agency furnishing the motorcycles on a monthly or yearly basis. Plans of this nature should be based upon a written contract stipulating the lease agreement with a full understanding between the agency furnishing the motorcycle and the school involved.

A few school districts may desire to purchase their motorcycles outright on a bid basis. In some respects, this plan is more desirable than any other since the school has complete control and the motorcycle is available the year round, as is other instructional equipment.

5.3 Special Eduipment

The following equipment is recommended for the proper care of the vehicle and the safe, effective conduct of the riding phase of the program:

a. Outside mirrors on each side

b. First aid kit

c. Directional lights

5.4 Insurance

All motorcycles must be adequately covered by insurance because risk can only be minimized, not completely eliminated. Before permitting a motorcycle to be used, the instructor must be certain that adequate insurance is provided for protection of the school, the teacher, and the student. A minimum of coverage should include bodily and property damage liability insurance with a suggested range of

a. $100,000 to $300,000 bodily injury liability.

b. $25,000 or more property damage

c. Full comprehensive protection covering theft, fire, glass breakage and vandalism.

d. Collision protection, $50 deductible recommended.

e. Each school district should provide adequate insurance coverage for instructors.

f. Probably the best way to secure insurance coverage is through a fleet policy with the school district. Usually this method provides good coverage at a smaller premium.

It is also suggested that a medical rider be secured to pay the medical expenses of anyone injured in an accident involving the insured motorcycle. Frequently, students are provided the opportunity to secure accidental medical insurance through a group plan by an insurance company in cooperation with the school district. This type of insurance is often referred to as "school insurance."

5.5 Administrative Policies

The school system should have a clearly stated policy governing the circumstances, times, and persons concerned with the use of motorcycles in motorcycle safety education courses. It is recommended that the motorcycle be used only for riding instruction. (Refer to Appendix E; Driver Education Vehicle Usage)

5.6 Registration and Certificate of Title

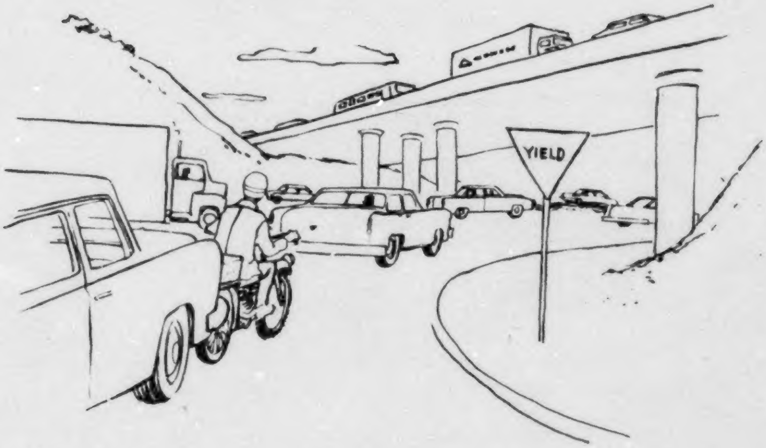
Kansas law relating to motor vehicles stipulates that all vehicles must be properly registered and titled. No vehicle should be permitted on the road unless the license tag is attached.

5.7 Maintenance

If a vehicle is procured on a loan, lease or rental basis, it is imperative that the motorcycle be returned in good condition on the expiration date.

The school relationship with the dealer must not be overlooked. All problems relating to the cycles' use should be discussed only between the dealer, instructor and administrator.

Part 2. Curriculum



SECTION 1. ON HIGHWAY TASKS

Unit A. Basic Control Tasks

Unit Objective:

Students will be able to control the vehicle and perform basic maneuvers to the point where they can enter light traffic under teacher supervision.

Episode Titles:

1. Directional Control
2. Braking and Stopping

Unit B. Interacting With Other Highway Users

Unit Objective:

Students will be able to demonstrate a level of proficiency in the human functions (identification, prediction, decision and execution) sufficient to perform legally and safely as they interact with other highway users in routine and difficult system environments.

Episode Titles:

1. Movement Within Traffic Flow
2. Maneuvering The Vehicle
3. Critical Situations

SECTION 2. READINESS TASKS

Unit A. Operator Fitness

Unit Objective:

Students will be able (1) to identify and appraise physical, physiological, mental and psychological factors that influence the behavior of highway users; and (2) to determine appropriate courses of action to minimize the hazard caused by these factors.

Episode Titles:

1. Motorcycle Packaging
2. Handling Fatigue
3. Carrying A Passenger

Unit B. Vehicle Readiness

Unit Objective:

Students will be able to develop a vehicle maintenance and selection program that will facilitiate optimum performance from a vehicle suitable for trip requirements.

Episode Titles:

1. Vehicle Selection and Maintenance

Unit A. BASIC CONTROL TASKS
Episode 1. Directional Control

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Road Surface Factors	When shown pictures of roadways identify and appraise conditions that influence the gripping efficiency of the roadway.	
1.2	Weight, speed and vehicle profile	Relate weight, speed and vehicle profile to directional control.	
1.3	Temperature	Describe the effects of temperature to the cyclist.	

1.1 Many factors affect the gripping efficiency of road surfaces.

a. Surface materials (concrete, asphalt, gravel, and dirt) have different coefficients of friction.

b. Dry surfaces have a much greater gripping efficiency than wet surfaces.

c. Loose sand and graval, stone chips, mud, wet leaves, oil and grease greatly lower gripping efficiency.
(1) more "laydowns" occur because of loose surface substance.
(2) encountering a loose surface skid the cyclist will undoubtedly do much of the skidding in direct contact with the road surface.
(3) Watch out for sand, dirt or gravel at intersections. They could make you spill or skid while turning. Slow down and don't lean into a turn if there is sand, dirt or gravel on the road.

d. Rain is a contributing factor in motorcycle accidents.
(1) rain makes streets very slippery for 2-wheeled vehicles.
(2) water reduces friction between the wheel and road.
(3) rain causes other motorists to lose control causing them to enter the path of travel.
(4) braking efficiency is greatly decreased.
(5) if caught in the rain, seek protection for 15 minutes or to allow the rain to wash away the oil and dirt film from the street or highway.
(6) at a decreased speed start for home when the rain lessens or stops.

e. Bumpy washboard roads reduce the friction grip of tires on the road.
(1) bumpy washboard roads tend to cause the motorcyclist to lose his balance, thereby causing a dangerous skid.

f. Railroad tracks, bridge grates, chuckholes and manholes are all dangerous and should be crossed with caution.

g. Avoid riding on painted lines, as they are slippery even when dry.

h. Try to avoid hazards without losing control or crowding another vehicle.

i. Be very careful if there are many leaves on the road. Even if the leaves on top look dry, the leaves on the bottom are probably wet and slippery. If you must cross leaves on the road, cross them straight on. Don't put on your brake or speed up while you are crossing them.

j. Potholes in the road are a common problem. If you see a pothole in time, try to steer around it. If you cannot safely steer around it:
(1) Slow down.
(2) Take the hole straight on.
(3) Shift your weight back as far as you can.
(4) Rise off the saddle slightly by putting more weight on the footpegs. If you get the front end through the hole, the rest of the bike will probably make it.
CAUTION: Do NOT brake while you are in the hole. This is almost certain to cause a fall.

k. If it is impossible to miss an object or go through a puddle, hit it **straight on**, maintaining a constant speed, keeping a firm grip on the controls and riding in a semistanding position.
(1) do not brake unless it can be done **before** hitting the object. If braking is necessary, use rear brake only and slightly.
(2) raise your body slightly off the seat to maintain balance.

1.2 Weight, speed and vehicle profile influence directional control.

a. Wind affects the motorcyclist's speed, stability and maneuverability.
(1) Lean forward slightly to create less resistance.
(2) Hold on tighter and brace for gusts.
(3) If possible pull over and stop in a protected area until the wind dies down.

b. The effects of side wind forces increase as the weight of the cycle decreases.

c. Motorcycles are especially susceptible to wind forces.

d. As speed increases, the angle decreases at which direction changes can be made safely.

e. Trucks, busses and other large vehicles produce large wind gusts which are very dangerous when the cyclist is unprepared.

f. Lowering head and chest over gas tank to avoid strong headwinds is hazardous because of loss of balance and visibility.

1.3 Extreme temperatures (hot or cold) reduce the motorcyclist's ability to function as a system user.

a. Cold weather will slow down your reactions.
(1) Motorcyclists are often tempted to speed in cold weather to reach their destiniation.
(2) Remember to dress warmly in cold weather and stop frequently to warm up.

b. Hot weather can also be dangerous.
(1) Motorcycles may overheat.
(2) Even if you are warm, you still must wear protective clothing.

Unit A. BASIC CONTROL TASKS
Episode 2. Braking and Stopping

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Stopping	Indicate the factors that determine braking efficiency in a normal slowdown and stop.	
2.2	Locked Wheel Stop	Contrast locked wheel braking versus normal braking with respect to man-machine-roadways factors.	
2.3	Braking Techniques	Relate principles underlying the braking operation to braking techniques.	

2.1 Braking efficiency is influenced by a number of factors.

a. The front wheel is required to do more work than the rear wheel because of weight transfer.
(1) Seventy percent of the braking force is with the front wheel.
(2) Extreme care must be taken in applying front brake especially on loose surfaces.

b. The coefficient of friction between the tires and the road surface governs the maximum braking force usable. The most powerful brakes are useless without traction.

c. Maximum braking force is obtained just before the wheels lock.

d. Double the speed, and braking distances increase four times; triple the speed, and braking distances increase nine times.

2.2 When brakes are applied too firmly or too suddenly the friction between the brake lining and the brake drum is so much greater than the friction between the tires and the road surface that the wheels stop or lock before the vehicle stops.

a. If the wheels lock, the friction between the tires and the road is the major determinant of the length of the stops.

b. When both wheels are locked the motorcyclist will find it difficult to maintain balance.

c. When the rear wheel is locked while the front wheel runs freely, the cyclist will usually maintain balance.

d. Locked wheel braking in effect takes away your steering control and balance.

e. Weight of the vehicle does not change braking distance significantly in a locked wheel stop.

2.3 Proper techniques in braking can provide safe stops, prevent accidents, and also add miles to the life of the brakes.

a. Braking techniques become more critical as vehicle speed increases.

b. Applying rear brake slightly prior to front brake permits the vehicle to maintain a straight line of travel.

c. When compelled to stop quickly, particularly on a wet slippery surface, intermittent application of the rear brake (pumping action) will minimize the danger of skidding, and steering control will be maintained.

d. Braking for corners is best accomplished by:
(1) braking before entering the turn.
(2) using only rear brake cautiously, if braking is necessary during the turn. AVOID USING FRONT BRAKE.

Unit B. INTERACTING WITH OTHER HIGHWAY USERS

Episode 1. Movement Within Traffic Flow

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.2	Following Preceding Vehicles (s)	Given a series of traffic situations involving "fore and aft" relationships, identify relevant cues and select measures under operator control that will reduce the probability of conflict with other highway users. These situations will include freeway approach ramps and acceleration and deceleration lanes.	
1.3	Being followed by Another Vehicle		
1.4	Meeting an Oncoming Vehicle		
1.5	Passing and Being Passed	Describe the correct step-by-step process for passing another vehicle going in the same direction. Description should include the rationale for each step.	
1.6	Turning Movements	Descriptions should include land and speed choices, and communications techniques. Given a series of diagrams or pictures of various kinds of intersections.	

1.1 One of the most important things to remember is to SEE AND BE SEEN.

a. Turn on headlight day and night.

b. Wear brightly colored clothing — or white for night riding so other system users can see you.

c. Generally, the correct placement of the motorcyclist in traffic is near the left tire track.
(1) Here the driver in front can see the cyclist in his rear view mirrors.
(2) Also, driving near the left tire track will force passing vehicles to go around in the other lane in order to pass, instead of pushing the cyclist out of his lane.
(3) The road will be safer near the left tire track as oil accumulates in the center of the road lane.
(4) The far side of the lane near the curb is dangerous, as parked cars may open their doors.

1.2 To be prepared for unexpected moves by the vehicles(s) in front of you, maintain proper following distances and watch for conditions which would cause the driver to slow or stop.

a. The rule here is to leave enough room to stop in case of emergencies.

b. In swiftly moving traffic the motorcyclist should allow a two second spacing between him and the vehicle he is following.

c. Watch for commercial vehicles (trucks, buses, taxis) which may stop quickly without signaling.

d. On freeways leave additional room for emergency stops.

e. Never ride in another vehicle's blind spot.
(1) Blind spots are to right and left of vehicles as they obstruct vision of the road ahead as well as causing a blind spot in the cyclist's field of vision.

1.3 To some extent you are at the mercy of the driver following you, but there are some measures under your control which can reduce the probability of conflict.

a. Dispose of the "tailgater" by accelerating, decelerating, or moving into a slower lane (let him pass!).

b. Be alert to conditions ahead so you can avoid sudden or needless stops.

c. Flash your stoplights by "pumping" the brake pedal and also use a vigorous arm signal to warn an overtaking operator who seems unaware that you are slowing down.

d. Light and medium weight motorcycles have excellent stopping abilities under 30 mph. Therefore an extra margin between you and the following driver should be maintained to compensate for your better stopping capabilities.

1.4 Meeting an oncoming vehicle, particularly on a two-lane road, is potentially the most hazardous situation in riding.

a. An oncoming operator may cross the center line into your intended path as a result of:
(1) a momentary distraction;
(2) recovery from pavement drop-off;
(3) blinding rain, snow, fog, dust or smoke;
(4) swerving to miss a bicycle rider, a pedestrian, a road defect or obstruction;
(5) making a turn;
(6) excessive speed or lack of control on a curve;
(7) falling asleep; or
(8) alcohol or drugs.

b. To reduce the risk of meeting an oncoming vehicle:
(1) keep in the outside lane on four-lane roads.
(2) constantly check the action of oncoming traffic, so that you will be prepared to take evasive action;
(3) do not rely on the approaching car's turn signals;

(4) always use your headlights;
(5) condition your mind to the possibility of a vehicle coming across the center line into your path by examining the shoulder and adjacent area and planning an escape route (a ditch is better than a head-on-collision);
(6) actually practice evasive steering at lower speeds.

c. In the event that an oncoming vehicle does pull into your lane, a head-on collision must be avoided at all costs.
(1) Brake immediately but carefully to avoid wheel lock-up, blast your horn, and dodge to the right — onto the shoulder, into a ditch, or into any gap that you can create in the line of cars on the right.

1.5 Safe and efficient passing hinges upon good judgment plus a systematic pattern of action.

a. Pavement markings and signs aid the rider in making a "passing" decision, but he must search for additional information.
(1) Grades (vertical curves) on undulating roads were built for cars a foot or two higher, making it difficult to see modern cars in the dips.
(2) The size and color of oncoming vehicles influence the distance judgment of the perceiver.

b. Communicating your intention to pass (horn or lights) reduces the chance that the operator being passed will swerve into your lane.

c. If for any reason the vehicle being passed demonstrates erratic behavior before the point of decision is reached, drop back into the right lane and re-evaluate the situation.

d. Look for any side roads on the left and right; and see if a car is waiting there. If so, don't pass.

e. By building up a clear superiority of speed over the vehicle being passed, the operator minimizes the time he is exposed in the passing lane.
(1) A 15 mph superiority means approximately 8 seconds in the passing lane.
(2) The time required for passing when 15 mph superiority has been built up is the same regardless of the speeds of the two vehicles, but the distance used up in passing increases as the speed increases.
(3) Almost one-half mile is needed to make a safe pass at 65 mph if another vehicle is coming from the opposite direction at the same speed.
(4) More time is required to pass a truck, bus or trailer. (trucks pick up speed on down grades, so you must catch a truck at the beginning of the down grade to pass.)
(5) Because of air resistance and a reduction of power available at the rear wheel it takes longer to accelerate and pass at high speeds.

e. Be alert to air currents which will confront the cyclist when he is in the passing lane.

f. Flashing headlight, using dimmer switch, will attract the attention of the approaching driver and the driver being passed.

1.6 A competent rider is marked by his ability to make well-timed and accurate turning movements at intersections.

a. A rider communicates his intention to turn by positioning his vehicle in the appropriate lane and signaling 100 feet in advance.
(1) The proper approach lane for an intersection turn, unless otherwise marked, is the one closest to the direction of the turn. This blocks anyone from trying to pass on the side toward which the rider is turning.
(2) In situations where you suspect an operator following or approaching you does not see your turn flasher because of bright sunlight or inattention, use a hand signal, also.
(3) At lower speeds and in heavy traffic, use hand signals to make sure you are seen. Always have both hands on the handlebars when completing the turn.

b. Keeping your wheels straight when you stop to wait for a safe gap in traffic to make a left turn, minimizes the chances of being driven into the lane of oncoming traffic if struck from the rear.

c. Wait to make your turn onto a main highway until you have space and time to gain cruising speed without interfering with the progress of other vehicles.

d. When waiting to turn, put both feet down for balance. When starting the turn, right foot up and left down. Do the opposite for right turn.

Unit B. INTERACTING WITH OTHER HIGHWAY USERS

Episode 2. Maneuvering The Vehicle

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Controls, Gauges and Equipment	2.1-2.7 Students will be able to (1) verbalize the proper sequence of steps and relevant rationale for performing these maneuvers and (2) execute the maneuvers to the point where they are able to apply them in light traffic. (refer to Part III for sequential steps.)	Textbook material, transparencies, films & other aids will help students acquire an understanding of the how and why of each maneuver. (cognitive learning). This step will reduce the time needed in the lab phase for developing performance proficiency.
2.2	Pre-starting and Starting Procedures	Further proficiency and confidence will be obtained as they practice the maneuvers under "real world" traffic conditions (Unit B). Refer to Part III for a sequential step order to given maneuvers.	Lab methods appear to have distinctive strengths related to developing proficiency in performing maneuvers.
2.3	Starting, Moving, Stopping & Security		
2.4	Left and Right Turns	Off-Street Instruction — Efficient and effective method for learning the motor skills and distance judgment required for executing the maneuvers	Off-Street Instruction—Efficient and effective method for learning the motor skills and distance judgment required for executing the maneuvers.
2.5	Lane Changing and Passing		
2.6	Parking-Angle, Perpendicular & Parallel		On-Street Instruction—Brings together all the capabilities needed to perform the maneuvers—understanding, motor skills, perceptual and predictive capability.
2.7	Up-down Hill Starting, Stopping and Parking		

Unit B. INTERACTING WITH OTHER HIGHWAY USERS

Episode 3. Critical Situations

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Typical Responses	Identify critical situations that occasionally face a vehicle operator, predict how unprepared operators are likely to respond, and explain why they respond that way. Students will be expected to relate their analysis to the basic human functions-identify, predict, decide and execute.	
3.2	Pre Conditioning	Explain how a vehicle operator can increase the probability of responding correctly in a critical situation and illustrate with examples in both non-traffic and traffic situations.	
3.3	Brake Failure	Describe the steps drivers should follow to handle the vehicle malfunctions and failures included in 2.3 through 2.7.	
3.4	Tire Failure		
3.5	Accelerator Stuck		
3.6	Engine Stalls		

3.1 Critical situations (skidding, brake failure, tire blowout, etc.) allow little or no time for decision-making, and frequently produce the wrong responses.

a. Skilled reactions tend to become disorganized under emotional stress or panic.

b. Most operator panic or near-panic occurs when the operator is surprised by a hazard.

c. A strong stimulus which surprises the rider tends to produce an impulsive or unplanned response.

d. Correct automatic reactions must be learned in advance. Otherwise, emergencies may and frequently do evoke an improper response.

3.2 Some experience with a critical situation, either in reality or by means of mental rehearsal, reduces the emotional impact and increases the probability of performing the correct response.

a. Panic can be avoided by thinking (panic tends to paralyze the reasoning center of the brain) and that is why it is so important to know what to think and how to perform.

b. By creating a continual series of imaginary situations and hazards (hypotheses or guesses based on experiences) a rider prepares himself in advance to do the right thing in a crucial situation.

c. After much imagination and repetition, these mental sets tend to sink below the level of awareness and become semi-automatic.

d. The rider who can control himself in an emergency is the kind of person who would be more apt to control his motorcycle.

3.3 Any decrease or loss in braking power compels the operator to maintain steering and positioning control and regain speed control.

a. When a brake fails:
(1) pump the other brake until control has been gained.
(2) downshift to permit braking.
(3) find an escape route — a safe exit from the highway; and
(4) communicate your emergency situation to other highway users (sound horn, flash lights)

b. In extreme cases it may be necessary to slow the vehicle by:
(1) driving into bushes, hedges, or snowbank; or
(2) laying cycle down in sodded area.

c. If uneven action results from wet brakes, dry them by staying in low gear slightly twisting accelerator while brakes are being gently applied.

3.4 Steering control is threatened when a tire blows out.

a. If a tire blows, the rear of the motorcycle may swerve or sway violently.

b. No matter which tire blows out:
(1) Firm your grip on the handlebars.
(2) Ease up on the accelerator, allowing engine braking to slow the cycle.
(3) Stay off the brakes as they will only increase skidding and cause the flat tire to lock up. Keep the clutch in at all times, and hands off the throttle.
(4) Brake only when motorcycle is under control.
(5) Drive entirely off the road to a level spot.

3.5 When the accelerator sticks, power must be cut off the drive wheel.

a. Immediately pull in on the clutch, apply brakes, pull off the road.

3.6 When the engine stalls.

a. The first rule is to keep cool. If there is no traffic, move quickly to the side of the road.

b. If it is impossible to move to the side, try to start the machine.
(1) Put gas control on "reserve"—it may be out of gas. Sometimes it helps to pull out choke to get the engine to start.
(2) Start in neutral, however, most new bikes can also start in gear.
(3) If the motorcycle fails to start, make sure you are seen by on-coming traffic. (wave of the arm; brake light; turn signal on.)
(4) Then, get off the bike and push it to the side of the street when it can be done safely.
(5) Tie something white to the handlebars.

Unit A. OPERATOR FITNESS

Episode 1. Motorcyclist Packaging.

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
1.1	Special Problems	List packaging differences between the motorcyclist and the automobile occupant.	
1.2	Helmets	Compare the probability of head injury in a motorcycle accident with and without a helmet.	
1.3	Eye Protectors	Assess the positive and negative reasons for utilizing eye protective devices.	
1.4	Gloves	Describe what happens when motorcycle riders fail to wear gloves during cold temperatures and on extended trips.	
1.5	Shoes or Boots	Classify specific kinds of shoes and boots suitable for riding a motorcycle.	
1.6	Other Protective Clothing	Given a list of clothing, arrange them in the order that would provide maximum protection to minimum protection.	

1.1 The operator of a motorcycle has some special problems and protective measures to consider.

a. Two-wheeled vehicles violate the "packaging" principle, since there is no enclosing structure to cushion and distribute the forces of impact, or to prevent the vehicle from spilling its contents.

b. In some instances (when a crash is inevitable) jumping is less dangerous than being thrown, because if you lose control of a motorcycle you stand the chance of being trapped between the vehicle and the roadway surface.

c. In equipping a motorcycle, the operator should consider that:
(1) protrusions such as mirrors, extra lighting, roll bars, and luggage racks may become instruments that can penetrate the body in a collision;
(2) control levers should have "ball-ends" to prevent stabbing;
(3) seat back rests may be lethal in a spill in which the bike spins;
(4) exhaust pipes should be tucked away and shielded to prevent burns; and
(5) high handlebars not only provide poor control, but may increase the severity of the collision.

1.2 The helmet is the most important piece of equipment in protecting the cyclist against serious injury.

a. 75 percent of all motorcycle fatalities are due to head injuries.
(1) In most states it is illegal to ride without a helmet.
(2) A personal rule should be: ALWAYS WEAR A HELMET.
(3) Helmets should meet American National standard Z90.1.

b. Helmets should be buckled firmly and should be comfortable.

c. Most helmets will last about four years.

d. A sun visor or shield on your helmet will help to protect against glare and wind.

1.3 Eye Protection — glasses or goggles with safety lenses or face shields.

a. At highway speeds bugs and dirt can mar your vision — get in your eyes.

b. Without protection eyes water due to wind and cold thus reducing vision.

c. Without both hands on the handlebars you have no means to shield your eyes from sun, dirt and wind.

d. Riding without eye protection is like riding with your eyes closed — NOT A VERY GOOD OR SAFE IDEA.

1.4 Gloves are essential during cold weather and on long trips.

a. For protection of your hands and for comfort.

b. In case of a fall gloves are important to guard against skin abrasions.

c. In cold weather and at high speeds the coldness will cause hands and shoulders to tighten up, thus hindering the rider in his operation of the hand controls.

d. Gloves should fit comfortably and have no large seams — they cause blisters.

1.5 Shoes provide support for the ankles during a spill.

a. NEVER WEAR TENNIS SHOES OR SANDALS.

b. Shoes, preferably boots, should be made of durable leather and should cover the ankles.
(1) for protection when starting motorcycle.
(2) for ankle and foot support.

c. Shoes should have heavy soles and fit comfortably.

1.6 Protective clothing serves several purposes; some are as follows:

a. Brightly colored clothing will help make the motorcyclist more noticeable. It's important to BE SEEN.

b. Clothing should be comfortable.

c. Clothing should provide warmth during inclement weather.

d. All parts of the body should be covered in case of a fall.
(1) No shorts or bathing suits.
(2) No T-shirts without sleeves.

e. Durable clothing is best, with heavy jackets and/or windbreakers.

f. Remember: always dress from head to foot.

Unit A. OPERATOR FITNESS

Episode 2. Handling Fatigue

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
2.1	Effects of Fatigue	Predict the effects of fatigue on human functions and operator performance.	
2.2	Handling Fatigue	Formulate personal guidelines for minimizing the danger of fatigue induced accidents.	

2.1 Fatigue causes physiological changes which result in reduced performance by the systems of the body. This, in turn, impairs the rider's ability to function effectively.

a. Effects of fatigue are generalized throughout the body, causing:
(1) narrowing of the visual field;
(2) impairment of sensory acuity;
(3) delayed and distorted perceptions (perceptual skills have been demonstrated to deteriorate more than motor skills after prolonged riding);
(4) impaired judgment and prediction;
(5) delayed decision-making and reactions; and
(6) reduced control and timing of neuromuscular skills.

b. Because of these effects a fatigued rider is more likely to:
(1) ignore or fail to recognize critical elements in the traffic environment.
(2) be affected by glare.
(3) misjudge the speed or distance of another vehicle.
(4) become irritable, discourteous and over-react to minor irritations, and,
(5) make a clumsy or impulsive action while maneuvering the vehicle.

c. Some riders who are very tired get "throttle happy" and ride at excessive speeds without their immediate knowledge, while others slow down without realizing it.

d. Collisions involving a rider who has fallen asleep (sleeping is not always a voluntary activity) are usually characterized by no skid marks or evidence of evasive action prior to impact.

2.2 Certain measures can be used to delay the onset of fatigue.

a. Fatigue and drowsiness represents a fortunate warning to be heeded.

b. To help maintain mental alertness and avoid the onset of fatigue on long trips:
(1) be well rested when starting the trip;
(2) keep your eyes moving;
(3) wear good quality sunglasses in bright sunlight;
(4) avoid heavy foods and alcoholic beverages;
(5) keep the car well ventilated; and
(6) stop periodically for rest and light exercise.

Unit A. OPERATOR FITNESS
Episode 3. Carrying a Passenger

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Legal Requirements	Identify legal requirements associated with carrying a passenger.	
3.2	Safe Riding Practice	Explain why different unsafe passenger riding practices are detrimental to the riding task.	

3.1 The passenger on a motorcycle must be aware of law requirements associated to him.

a. Law requires that the motorcycle have a separate seat behind the driver for the passenger or a dual seat. The passenger must also have his own set of footpegs.

b. The passenger is required to wear a helmet that meets the Z90.1 standard.

c. It is recommended the passenger wear eye protection (face shield, glasses, goggles, etc.)

3.2 The control that a motorcyclist has on his machine is dependent upon the actions of his passenger.

a. A motorcyclist should not attempt to carry a passenger until he is a thoroughly experienced rider.

b. Passengers should wear protective clothing: gloves, eye protection, heavy shoes or boots, long pants and long-sleeved jacket.

c. A passenger should be instructed to keep his body in line with the driver's and maintain a relaxed and ready position.
(1) Sudden moves can throw the motorcycle off balance.
(2) If passenger sits up straight and stiff he will make cornering and maneuvering more difficult.
(3) The passenger should be instructed not to practice body lean on turns as this is controlled by the operator of the cycle.

e. A passenger should not mount the motorcycle until the driver has started it and is ready to go. Passenger should not dismount until engine is turned off and safely parked.

f. Be aware of the effects of this added weight in terms of handling, etc.

g. Always maintain adequate stopping distances because of the added weight.

Unit 3. VEHICLE READINESS
Episode 3. Vehicle Selection and Maintenance

Seq.	Concepts	Objectives—Student Behavior Students will be able to:	Learning Activities & Resources
3.1	Vehicle Selection	Given a study of a young person with specific needs and reasources who purchased a motorcycle, identify the good and bad decisions made by the purchaser (size, type, power, cost, payments, maintenance, etc.).	
3.2	Preventive Maintenance	List the periodic checks that should be made to maintain efficient and economical operation. Given a list of vehicle components (cooling system, battery, tires, etc.).	
3.3	Operating Conditions	State the implications these conditions have for a vehicle maintenance schedule. Given various operating conditions.	
3.4	Choosing a Service Agency	Formulate criteria and guidelines for selecting and dealing with a service agency.	

3.1 There are various types of motorcycles — one for every member of the family. Some are not equipped for safe street riding.

a. Street motorcycles come in many sizes. These motorcycles are equipped for street riding only — commuting, touring and pleasure riding. All are street legal, have necessary lights, reflectors, safety equipment and tires.

b. Trail motorcycles are generally smaller and lighter than street motorcycles. Some of these are equipped for both trail riding and street riding. Be sure to check if your motorcycle can safely be ridden on the street.

c. Minis are the smallest machines. They are sized right for children, yet many adults enjoy riding them too, for weekend camping run-abouts. Minis are usually designed for trail riding but can also be street legal.

d. Before riding make sure the motorcycle fits you.
(1) When sitting on the motorcycle, both feet should reach the ground.
(2) With elbows bent you should be able to firmly grasp the handlebars.
(3) Learn to mount on the safe side usually the curb side, away from traffic.

e. Please remember that to be a safe and skillful rider it **takes practice.** Before riding in traffic the operations of the motorcycle should become atuomatic. Practice in an empty parking lot or on a sodded area until you are totally sure of yourself and your machine.

3.2 To increase the safety and efficiency of a motorcycle, riders should see that the following are checked daily before riding.

a. Brake system — check free play and adjust to manufacturer's specifications.

b. Oil level — correct oil level is at the FULL mark on the dip stick or slightly below.

c. Clutch — check free play and adjust to manufacturer's specifications.

d. Horn — check to see if it works and if it is loud enough.

e. Lights — all lighting systems must function. (Headlight-high & low, tail light, brake light, turn signals, etc.) Lenses must be kept clean and in good condition.

f. Mirrors — Mirrors should be clean and properly adjusted. Check to see if they are tight enough to hold positions. Twin mirrors are a must for street riding.

g. Nuts & Bolts — Visually check all major nuts and bolts.

h. Gas — It's not fun or safe to run out of gas.

i. Tires — Visually check tires for pressure and cuts.

j. Other checks that need to be performed less often are as follows:
(1) Battery — electrolyte level; external condition of battery, and cables for damage, cracks warped case and corrosion (remove corrosion with soda solution and apply petroleum jelly on the post and cables to prevent further corrosion.)
(2) Tires — check tire pressure with guage (test and inflate when cold) condition of tires (wear, cuts and cracks).
(3) Chain — Is the chain properly adjusted? (Not too tight or too loose.) Is it properly lubricated?
(4) Cables — check cables for proper adjustment. Check to see if they are well lubricated.
(5) Nuts & Bolts — Tighten all major nuts and bolts.
(6) Cleaning — Cleaning your motorcycle cannot be stressed enough! While in the process of cleaning it all of the above listed items can be checked, adjusted, corrected, or replaced. (Wash and polish).

3.3 The kind of operating conditions make a difference in the need for vehicle maintenance.

a. Oil changes should be more frequent in colder weather, dusty climates and short-trip riding.

b. Tires are more likely to go flat in hot weather.

c. Freeway driving is a severe test for any potentially weak points in the mechanism of a vehicle (tires, chain, etc.)

d. Certain riding practices are costly in terms of gasoline consumption, wear of tires and damage to the car:

(1) excessive speed,
(2) quick starts and stops,
(3) racing the engine,
(4) improper gear selection,
(5) striking curbs, "chuck-holes," and obstructions and
(6) misuse of clutch.

3.4 A most important factor in your vehicle maintenance program is to choose a reliable service agency with reliable mechanics; otherwise, you are going to spend money for repairs that are not needed or are not properly done.

Part 3. On-Cycle Instruction

Section	Title
1	Motorcycle Controls
2	Clutch, Gearshift, and Throttle Usage
3	Rear Brake
4	Pushing, Stopping, and Finding Neutral
5	Starting and Stopping Procedures
6	Friction Point
7	Smooth Starting
8	Shifting To All Gears
9	Basic Cycle Maneuvers
10	Front Brake Usage
11	Hand Signals
12	Cycle Mirror
13	Emergency Braking
14	Special Cycle Situations

Introduction

In this unit you will learn the basic elements involved in riding a motorcycle. The beginning step will be to identify the controls and learn their functions. Next will be to learn to operate the controls and then to learn some basic procedures involved in actually riding a cycle.

Section 1. MOTORCYCLE CONTROLS

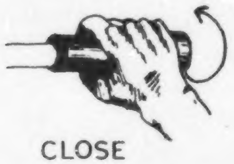
Objective

To learn the various controls of your motorcycle, their location and use.

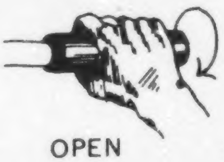
1.1 There are two basic control locations on a motorcycle. One location is for hand controls and these are on the handlebars. The other is for foot controls and these are on either side of the engine.

1.2 A cycle has two brakes, a rear brake operated by your foot and a front brake operated by your hand. The rear brake has a foot pedal which you press down to operate the brake. (This pedal may be on either side of the gear box depending on the type of motorcycle you have. Consult your owner's manual to find its location.) The front brake is operated by a lever on the right side of the handlebars.

1.3 The throttle on a motorcycle is like the accelerator pedal on a car. The handgrip on the right side of the handlebars is the throttle. This controls the speed of the cycle. To go faster turn the throttle towards you (open it). To slow down, turn the throttle away from you (close it). The throttle is said to be open when you turn it toward you. It's closed when you turn it away from you as far as it will go.



CLOSE



OPEN

1.4 The clutch lever is on the left handlebar. Some lightweight cycles have an automatic clutch; these models don't have a clutch lever. The gearshift lever is located on the opposite side of the cycle from the rear brake pedal. Check your owner's manual for location and pattern of your gearshift. Usually, cycles have 4 or 5-speed transmissions which means there are 5 or 6 positions for the gearshift lever (neutral position included).

1.5 Other common controls are:

(1) Turn signal switch. If your cycle has turn signals, the switch is on the left or right side of the handlebars.

(2) Headlight dimmer switch—usually on the left side of the handlebars.

(3) Horn button—usually on the right side of the handlebars.

4. Ignition switch—on the headlight shell or on the left side of the cycle just below the tank. The ignition switch may be the kind which is turned to a special position to turn on the lights or there may be a separate switch for the lights.

1.7 Locate the following controls on your cycle:

1. Fuel tap—usually located on the bottom of the gas tank. The fuel tap turns the gas supply to the engine on and off and it allows you to switch to the reserve gas supply.
2. Choke—used for cold weather starting. The choke should be turned to its original position once the engine is warmed up.
3. Kick-starter or electric start button depending on your cycle.
4. Fork lock—to discourage theft of your cycle.

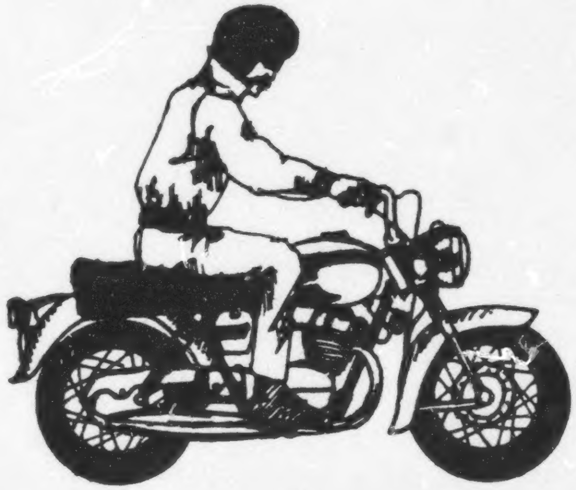
Use your owner's manual to find all of these on your cycle.

1.8 Most motorcycles have a kickstand which is used to hold the cycle up when it is parked. The kickstand is like a bicycle kickstand and is on the left side of the cycle. Some have a centerstand which comes down from a point under the rear of the engine.

1.9 The comfortable way to sit on your cycle is as follows:

1. arms bent slightly
2. lean forward just a little
3. back is straight, not hunched
4. feet on footpegs
5. knees should hug fuel tank

(See drawing below.)



1.10 Sit on your cycle and work the controls. Turn the throttle, squeeze the levers and press the brake pedal. Practice the right way to grip (grip firmly and squeeze with all fingers), press or squeeze these controls until you can find and operate them without thinking.

Section 2. CLUTCH, GEARSHIFT, AND THROTTLE USAGE

Objective

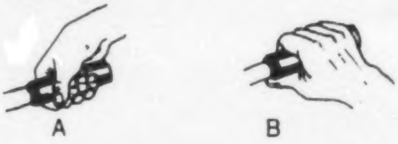
To be able to use the clutch lever, the gearshift lever, and the throttle to get your cycle moving.

2.2 Getting a cycle moving seems complicated at first. A good way to learn is to go through the motions step by step, with the engine off. This way you can practice the steps at your own pace. Do this with the cycle on its centerstand.

2.3 If you are starting from a standstill, do the following things:

1. Squeeze the clutch lever as far as it will go toward the handlebar.
2. With your foot, move the gearshift lever to the first gear position.
3. Put both feet on the ground.
4. Ease out the clutch smoothly. Do this while slowly turning the throttle toward you at the same time.

2.4 Be sure to squeeze the clutch lever before you move the gearshift lever. Also learn the right way to grip the throttle. (See drawing below.)



TIGHT GRASP
WRIST UP
POOR POSITION

FINGER WRAP
WRIST DOWN
BEST POSITION

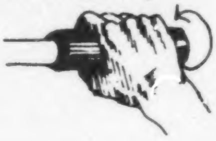
Section 3. REAR BRAKE

Objective

To learn to use the rear brake at slow (5-15 mph) speeds.

3.1 To stop your cycle by its rear brake you should:

1. Close the throttle (turn the throttle away from you as far as it will go). See drawing.



CLOSING YOUR THROTTLE

2. At the same time, press down on the rear brake pedal. Don't "slam on" the rear brake. A rear wheel skid could result.
3. Squeeze the clutch lever as soon as you begin braking.
4. Put your feet on the ground to steady the cycle as soon as it has stopped. You should still be squeezing the clutch.
5. Return your "gearshift foot" to its place on the footrest. Shift to neutral and let your clutch out.

3.2 Practice this sequence on your cycle while it is standing on its centerstand with the engine off.

Section 4. PUSHING, STOPPING, AND FINDING NEUTRAL

Objective

To learn to push your cycle and shift to neutral while the engine is off.

4.1 Your first riding practice should be done in an off-street area. A smooth field (football field) or maybe a parking lot would be fine. Make sure that your practice area is free of sand, gravel, broken glass, holes, cars, or other things that could get in your way.

4.2 Push your cycle around to get the feel of it. You will have to make sure that the cycle is in neutral. First, move the gearshift lever to the neutral position. Then try rolling the cycle a foot or so. If the machine is in neutral, it will roll freely. (Check owner's manual for gearshift positions.)

4.3 The gearshift lever may be hard to move. If it is, roll the cycle back and forth a couple of inches and move the gearshift lever at the same time. A good way to find neutral is to move the gearshift lever to first gear, and then to the neutral position. Turn ignition switch on—a green light will show in the speed-dial when the transmission is in neutral.

4.3 The gearshift lever may be hard to move. If it is, roll the cycle back and forth a couple of inches and move the gearshift lever at the same time. A good way to find neutral is to move the gearshift lever to first gear, and then to the neutral position. Turn ignition switch on—a green light will show in the speed-dial when the transmission is in neutral.

4.4 When you push the cycle, lean it toward you slightly to keep it from falling away from you. Push it with both hands on the handbars. Use the front brake to stop.

4.5 If you have a friend along, have your friend push you with the engine off and the cycle in neutral. Coast in a straight line, then press the rear brake to stop. Find out whether it slows the cycle suddenly or gradually when you press the brake.

4.6 Remember the sequence of steps used to stop your cycle. You should practice these when you are stopping from a coast.

Note: You should normally press down on your rear brake before you pull on your front brake. This method will prevent you from flying over the handlebars and insure that your stop light will be on as soon as any braking is being done.

Section 5. STARTING AND STOPPING PROCEDURES

Objective

A procedure for starting your cycle and for stopping your cycle.

5.1 **To start your cycle** do the following steps:

1. Open your fuel tap. Many cycles have a tickler valve on the carburetor which enables you to pump some gas to the carburetor so the engine will start. Also if the weather is cold you may have to use your choke. See your owner's manual for details of your machine.

5.2 If you have a lightweight cycle, it is possible to take your cycle off its stand on a level spot to start it. For heavier cycles this procedure is more difficult and you should first practice with your machine still on its stand.

5.3 Make sure that your cycle is in neutral. The easiest way to do this is to find first gear and then shift to neutral.

5.4 Turn the ignition switch to the "on" position. (Look for the green neutral light.)

5.5 Straddle your motorcycle. If you have your cycle off its stand, lean the cycle away from the side the kick-starter is found. This will balance the force of your kick.

5.6 Put your foot on the kick-starter with the lever slightly behind the ball of your foot.

5.7 Press down on the lever until it stops moving easily. Don't kick yet.

5.8 Pull your foot up to let the lever return to its original position. Don't let the lever snap back by itself. You have just set the engine up for a solid starting kick.

5.9 Open the throttle about ¼ turn. Kick down sharply. Use some body weight plus your leg muscles. Kick the kick-starter all the way down to the end of its stroke. Put some "oomph" into it.

CAUTION: Many larger cycles may kick back quite strongly. To avoid being injured if your cycle does this, keep your foot firmly on the kick-starter but allow the cycle to push your leg back up. Don't stiffen your leg muscles at the bottom of the stroke.

5.10 When the engine starts, close the throttle. This keeps the engine from racing or "reving up" too much.

5.11 A cold engine might stall if you opened the throttle. Warm your engine up for a minute or two before riding away.

5.12 To shut off your cycle, do the following things:

1. Turn the ignition key to the "off" position.
2. **Close** the fuel tap.
3. Get off your machine.
4. Put the cycle on its stand.
5. Turn the front wheel to one side. Turn the key in the fork lock to lock it in this position.

Section 6. FRICTION POINT

Objective

To be able to use your clutch better through finding the friction point.

6.1 Some motorcycles have clutches which begin to engage (send engine power to the rear wheel) quickly when the rider eases out the clutch lever. Other cycles have clutches which engage more slowly when you ease out the lever. (Remember to check protective clothing before putting in motion—Refer to "Motorcycle Packaging" in Part 2.)

6.2 The first thing to find out is the point during the gradual release of the clutch lever when the motorcycle first begins to move.

1. Start the cycle.
2. Squeeze the clutch lever.
3. Shift into first gear.
4. Slowly, very slowly, ease out the clutch lever only until you hear the motor slow down a bit.
5. Now the cycle will begin to move forward slowly. Squeeze the clutch lever again right away before the cycle moves more than an inch or two.

6.3 When you ease out the clutch lever, the point when the motor first slows down and the cycle begins to move forward is called the **FRICTION POINT.**

6.4 You should be able to find the friction point without looking at your hands. Practice the above five steps until you know exactly where the friction point is on your cycle.

6.5 You can use your knowledge of the friction point to help in finding neutral.

1. Move the shift lever to what you think is neutral.
2. Ease out the clutch lever to its friction point.
3. If the cycle starts to creep forward, you are not in neutral.

6.6 If the cycle starts to move in the above process, squeeze the clutch all the way, shift your cycle to first gear. From first gear it is usually easier to find neutral. After shifting to neutral try the above outline procedure again. Practice this process until you can find neutral every time.

Section 7. SMOOTH STARTING

Objective

To get your cycle moving as smoothly as possible.

7.1 To get your cycle moving, do these five things:

1. Squeeze the clutch.
2. Shift into first gear.
3. Slowly and smoothly ease out the clutch lever.
4. As soon as the motor begins to slow down and the cycle starts forward, turn the throttle toward you slowly.
5. Keep easing out the clutch.

7.2 As you ease out the clutch past the fritction point, try to keep the engine from slowing down. Listen to the sound of the engine. When the engine sounds like it's slowing down, open the throttle gently as you keep easing out the clutch.

7.3 Don't let go of the clutch lever all of a sudden, or turn the throttle too fast. These actions could cause the cycle to jerk out of your control or stall. The key words are **SMOOTH** and **SLOW** in clutch and throttle operation.

7.4 It takes practice to learn how to work the clutch and throttle together so keep at it. You will have to experiment to find the right combination of clutch and throttle to get your cycle going smoothly.

7.5 Everyone stalls the engine a few times. If you do, put the cycle in neutral, start the engine, and get going again. If you stall the engine repeatedly, try letting out the clutch slower and giving the machine more throttle.

7.6 When your cycle is moving at the speed of a fast walk, it will be balanced. Put your feet on the footpegs. Otherwise you may twist an ankle if you let your feet dangle.

7.7 When you get going, ride in a straight line for a short way. Then use the rear brake to stop. Make several of these starts, straight line rides, and stops.

7.8 Remember to look where you are going. Most beginners have a tendency to look down at the controls. You should feel confident enough about the controls so that you don't have to look at them to get moving.

Section 8. SHIFTING TO ALL GEARS

Objective

To learn to shift to all gears, both upshifting and downshifting.

8.1 Higher gears go with higher speeds. Lower gears go with lower speeds. It is important that you use the right gear for the speed you are traveling.

8.2 The speed at which you should shift gears is called the **shift point.** Suppose that your cycle has 4 gears. Then there is a shift point between first and second gear, between second and third gear, and between third and fourth gear. Look at your owner's manual to find out the shift points for your cycle.

8.3 Suppose you are riding in a straight line in first gear at about 10 mph. This is about the shift point for second gear on many cycles.

1. Turn the throttle away from you as far as it will go.
2. Squeeze the clutch.
3. Move the gearshift lever to the position for second gear.
4. Ease out the clutch.
5. Turn the throttle toward you smoothly.

8.4 If you want to downshift from second gear to first, do the following:

1. Close the throttle. Use the rear brake to slow down.
2. When you slow down to the shift point, squeeze the clutch and then move the shift lever to the first gear position.
3. Ease out the clutch.
4. Open the throttle a little when the clutch reaches the friction point. This is to prevent the cycle from slowing down with a fast jerk.

8.5 Notice that you do almost the same things to shift down as to shift up. There are two main differences:

1. When you **upshift** you move the gear to a **higher** gear to go faster and for **downshifting** you move the gearshift lever to a **lower** gear to go slower.
2. You open the throttle less when you are downshifting than when you are upshifting.

8.6 Now start your cycle and give yourself some room.

1. Ride in a straight line in first gear.
2. Shift up to second gear when you reach the shift point.
3. Ride a short distance in a straight line.
4. Use the rear brake to stop.
5. Shift to neutral.

8.7 Don't worry about downshifting yet. Just get used to shifting to second gear, riding, and stopping. When you feel comfortable shifting from first to second, then try downshifting to first gear before you come to a stop.

8.8 Don't worry about the higher gears yet. The same method is used for shifting between them, only the speed is much greater. You should be able to shift back and forth between first and second gear with complete ease before trying higher gears.

Section 9. BASIC CYCLE MANEUVERS

Objective

To learn to lean and turn your cycle by riding in a circle, a figure 8, and a wavy line.

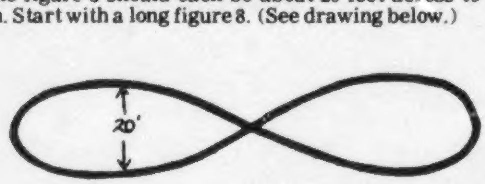
9.1 **Turning.** Riding your cycle in a circle is good practice for leaning and turning. Remember that you turn a motorcycle just like a bicycle. You lean the bike the way you want to turn. Always give yourself lots of room to turn in.

9.2 Ride in a big circle, about 40 feet across. Take it easy. Get the feel of leaning gently to turn the cycle. Try going around the circle the other way, too. Use first gear. Look ahead, not down at the ground. Ride at a speed which is comforable to you. It's hard to balance if you go too slow. Going too fast can make the cycle hard to control.

9.3 Try leaning the cycle a little more in the same direction as you want to turn. You can ride in smaller circles this way. Try making a circle of about 20 feet across. Work on riding in circles until you get the feel of steering the cycle. When you get used to making circles in first gear, try making some in second gear at slightly higher speeds.

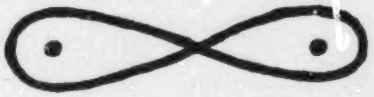
9.4 Can you ride in a smooth round circle without looking down? Practice making circles of different sizes until you can do small ones easily and smoothly. Practice making circles by circling both right and left.

9.5 Riding in a figure 8 will give you practice handling your cycle and switching from left to right turns. The circle parts of the figure 8 should each be about 20 feet across to start with. Start with a long figure 8. (See drawing below.)



9.6 Grip the gas tank lightly with your knees for better control. Keep the throttle set for a slow, comfortable speed all the way through the figure 8. Look straight ahead, not down.

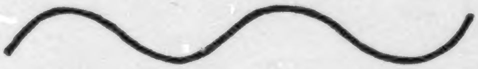
9.7 Put two markers down on the pavement. Drive around the markers in a figure 8. Practice this until it feels natural to you. (See drawing below.)



9.8 Try stopping on the straight part of the figure 8. Put the rear brake on when you are going straight before you turn. Braking too much in a turn can cause a spill. When you are used to making figure 8's in first gear, try some in second gear.

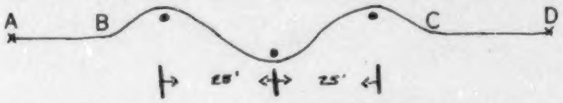
9.9 Were you able to make a smooth figure 8 without looking down? Could you stop on the straight parts of the figure 8? Did you feel confident with the figure 8 in second gear? If "**no**" to any, practice until "**yes.**"

9.10 After you can make figure 8's easily, smoothly and confidently, you can try the wavy line ride. This exercise will help you learn to lean your cycle and control it at higher speeds. Try riding in a wavy line like this at about 10-15 mph. Make your turns about 25 feet apart.



9.11 Make gradual turns at first by leaning from side to side. If you press down gently on the side of the handlebars toward the turn and pull up on the other side, you can make sharper turns. This will cause the cycle to lean more than the rider, so you get a sharper turn. Get the feel of leaning and shifting your weight back and forth. Then you can work up to sharper turns that are closer together.

9.12 Notice that when you go a little faster, you have to lean the cycle a little harder to make it turn. You might set up markers and try to go around them like this:



A. START
B. SHIFT TO 2ND GEAR
C. DOWNSHIFT TO 1ST
D. STOP

Section 10. FRONT BRAKE USAGE

Objective

You will learn how to use your front brake in connection with your rear brake.

10.1 For most stops, you should use the front and rear brake **at the same time.**

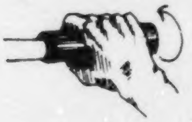
Why? Because braking throws extra weight on the front wheel. The extra weight on the front wheel helps it grip the road for braking. As a result, the front wheel brake has more stopping power than the rear brake.

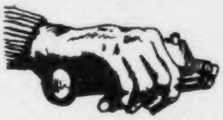
10.2 To be able to stop quickly and safely, you will have to learn to use the front and rear brakes at the same time. LOOK AT the front brake lever for a moment. You know that you use your right hand to turn the throttle and squeeze the brake.

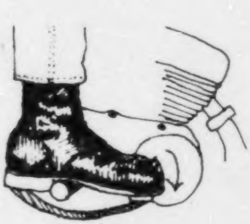
10.3 Sometimes a beginner will accidentally turn the throttle toward himself when he reaches for the front brake lever or squeezes it. You can imagine the look on the rider's face. He expects to slow down, but all of a sudden the engine roars to life. The motorcycle takes off with great speed. Luckily, a little practice with the engine off can prevent such an unexpected take-off.

10.4 You will want to practice reaching for the front brake lever without turning the throttle toward you. Remember to press the rear brake pedal at the same time in order to get the two-brake habit. Then squeeze the clutch. You want to be able to work the controls almost "automatically" without looking at them.

10.5 To stop with both brakes do these these things:


1.


2.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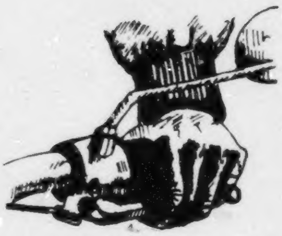

4.

1. Turn the throttle away from you as you . . .
2. stretch the fingers of your right hand to the front brake lever.
3. At the same time press the rear foot brake pedal and squeeze the front brake lever.
4. Squeeze the clutch lever when your speed is reduced below 15 mph. Did you turn the throttle toward yourself by mistake when you squeezed the front brake lever?

10.6 Practice making stops using both brakes. At first, stay in first gear and try stopping. After having practiced at low speeds (5-10 mph), practice at higher speeds (15-20 mph).

When you were stopping the cycle, could you keep it going in a straight line? Did you feel confident while you were in control?

If "no," practice until "yes."

10.7 There are some times when it is safest to use the rear brake by itself. These are:

1. when the road surface is slippery from water, sand, or gravel.
2. when the front wheel is turned even slightly to one side.
3. when you are leaning the machine in a turn. If you used the front brake in these conditions, you might take a spill. Put on your brakes gradually at first, then harder as the bike slows down. Putting on the brakes too hard at first can cause skidding.

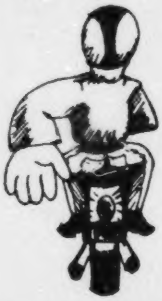
Section 11. HAND SIGNALS

Objective

You will learn the hand signals for turning and stopping, when and how to use them.

11.1 When you put on your brakes and stop, your brakelight goes on so the driver behind you knows that you are going to stop. On some cycles (pre-1969) only the rear brake makes the brakelight go on. If your cycle is like this, you can flash your brakelight so cars behind you can see you better when you slow down. Turn your ignition switch to the "ON" position. Tap or pump the rear brake pedal slightly to see how much more you have to move the pedal to make the light flash.

11.2 If you think the driver behind can't see your brakelight, you should use the hand signal for a stop. (The hand signal for stopping is shown below.)


HAND SIGNAL FOR STOPPING

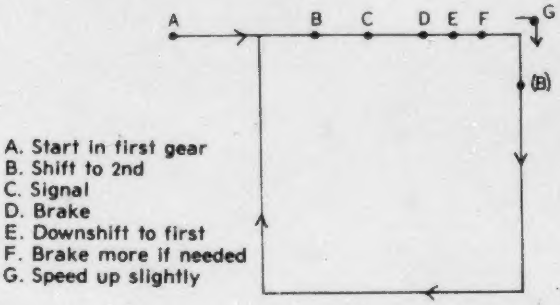
You should start giving the hand signal about 100 feet before you stop. This is about 5 car lengths away. Even if you have turn signals on your cycle, you will sometimes want to use a hand signal plus your turn signal light.

11.3 Suppose you have one hand off the handlebar to signal a turn or a stop. Your cycle hits a chuck hole or a bump. You could lose control very easily. You must learn to think ahead and look for bad spots on the road besides checking the traffic around you. On an extremely rough road you may not be able to give much of a hand signal.

11.4 Practice making 4 right-angle turns in first gear in the same direction. Note illustration on the next page. Speed up a little on the straight parts. Slow down a little by braking ahead of the turn, not in the turn.

11.5 Make four turns in the other direction. When you get used to turning, signal before your turn. Give yourself enough time to put your hand back on the handlebars before you make the turn. Make four more turns in both directions and signal before you turn or stop.

11.6 Give yourself lots of room (about 200 feet). Try shifting up to second gear when you're going straight. Signal, use both brakes, and then shift down to first gear before the corner. You'll have to put your hand back on the handlebars to put on the brake, so plan to signal your turns well ahead of time. If you have turn signals on your cycle, try using them plus your hand signals.



Section 12. CYCLE MIRROR

Objective

You will learn how to use your rearview mirrors.

12.1 Suppose you are going to pull out into traffic. You naturally check your mirror and look over your shoulder to make sure the lane is clear. Learn the habit of checking your mirror before you begin slowing down to stop and before you turn or change lanes.

12.2 You can't afford to look in your mirror for very long. Too many things are going on ahead of you. You'll have to learn to look in your mirror **just** long enough to check for traffic **behind** you. Practice glancing at your mirror before you signal for a stop. Your mirror won't show you everything that's behind you, though. When the road is clear in front of you, you should glance over your shoulder before you slow down.

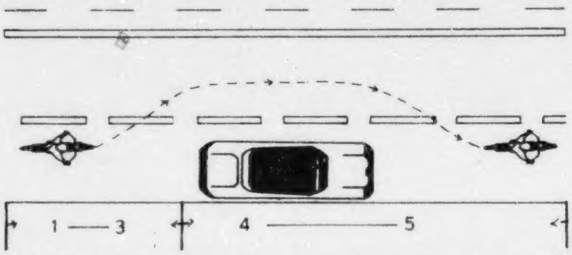
12.3 For a right turn, glance over your right shoulder. A bicycle, another motorcycle, or even a car might try to squeeze between you and the curb. If you turned, and the other person went straight, you'd smack into him.

For a left turn, glance over your left shoulder. Somebody just might try to get past you on the left.

12.4 You don't have to turn your head very much to do this. Quckly turn your head a little bit, and use your side vision to see behind you. Beginners tend to turn the handlebars by mistake when they glance over their shoulders. Be careful not to do this.

12.5 Try to keep your cycle going straight when you take a quick glance to the side. When you can do that, try a quick glance behind you. Practice mirror and shoulder glances until you can make them without swerving.

12.6 You can practice leaning the cycle to change lanes. Set up a marker ahead of you. Imagine that your marker is a stalled or slow car in the right lane of a four-lane road. You're going to change to the left lane to get around the car like this. You're riding in the left wheel track of your lane.



12.7 To get around the car you would do these things: (See drawing above.)

2. Signal for a left turn.
3. Put your hand back on the handlebars.
4. Change lanes.
5. Pass the car. Check your mirror and use a right shoulder check to find out when it is safe to return to the right lane. Signal when you change back to the right lane.

Section 13. EMERGENCY BRAKING

Objective:

You will learn an emergency braking procedure for FAST stopping.

13.1 Sometime you will have to stop fast to keep from running into something. You'll need to use both brakes if you want to stop in time. If you want to prove it to yourself, try this. Ride in a straight line in first gear at about 10 mph. Use the rear brake alone to stop. Then make another stop, and use both brakes. If your front brake is in good shape and you squeeze firmly on the brake lever, you will stop much faster with both brakes than with just the rear one (about half the distance).

13.2 Practice using both brakes at the same time. Try stops from about 10, 15, and 20 mph. Gradually make faster stops as you get used to stopping quickly in a straight line. When you make fast stops, don't take time to downshift. Just squeeze the clutch and put on the brakes at the same time.

13.3 Suppose you are going less than 50 mph in a straight line on **clear, dry pavement.** The fastest way to stop is to **lock up** (skid) the rear wheel and squeeze the front brake hard at the same time. To lock up the rear wheel, press down hard on the rear brake pedal.

Note: Remember, though, that above 35 or 40 mph you may have difficulty remaining upright due to the length of the skid. Another way to stop **and** keep upright is to pump your brakes.

13.4 When you make normal, fairly quick stops you shouldn't have to lock up the rear wheel. But when you have to stop quickly on **good, clear pavement** you should lock it up.

13.5 The only time you should ever try to stop by locking up the rear wheel is when you are on **clear, dry pavement.** If the road is slippery or wet, you will take a longer time to stop by locking up your rear wheel.

13.6 To get an idea of the way a cycle handles when the rear wheel is locked up, do this. (Don't try it until you are used to circles, figure 8's, stops, turns, and the wavy line ride.)

1. Ride in a straight line in first gear between 5 and 10 mph.
2. Press down hard on the rear brake pedal to make the rear wheel skid. Don't let up on the pedal.
3. The cycle will swerve from side to side a little. Don't fight it. Just hold the handlebars firmly.

13.7 Press on the rear brake pedal until you have stopped. When you can stop under control at this speed with the rear wheel locked up, use the front brake too. Use it gently at first, then harder when you learn to keep in control.

Remember that you should not lock up the rear wheel on pavement that is wet, sandy, slippery, or covered with gravel. If you do, you are likely to take a quick fall.

13.8 If you lock up the **front** wheel on a slippery road, the cycle will fall right away. Use your brakes gently on slippery roads and travel at lower speeds. Better yet, park the cycle and wait until the road is dry.

Section 14. SPECIAL CYCLE SITUATIONS

Objective:

There are going to be times when you will have to start your motorcycle on a hill or ride very slowly in heavy traffic. This section will give you hints on how to do these things.

14.1 It is difficult to keep your balance when you're going very slowly. To practice this, ride in a straight line in first gear. Slow down, but try to keep both feet on the footpegs.

14.2 At this point, the throttle should be almost closed. When you are going really slow, you'll have to squeeze the clutch a little to keep the engine from stalling. This is called **slipping the clutch.** When you feel the cycle start to slow down too much, ease the clutch out slightly and open the throttle just a little. You'll be using the clutch and throttle in the same manner as you do when you get the cycle moving from a dead stop. Your goal is to go as slow as you can without stalling the engine and without putting a foot on the ground.

14.3 Try riding slower and slower in a straight line. Then try a slow, tight figure 8. You may have to slip the clutch to keep the engine going. If your figure 8 is very tight and slow, you might even turn the front wheel. Try a slow tight wavy line ride with the markers about 15 feet apart. You'll have to slip the clutch and turn the handlebars to make it.

14.4 Starting out on a hill is tricky.

1. If you have to start up the engine, squeeze the front brake lever. This will keep the cycle from rolling backward.
2. To get moving, switch to the rear brake to keep the cycle from rolling back.
3. Open the throttle gently as you slowly ease out the clutch.
4. When the engine slows down, ease up on the brake and open the throttle smoothly as you ease out the clutch.

14.5 Try this on a slight hill at first. If you don't have a hill in your practice area, try these steps on the level. They'll come in handy the first time you have to start on a hill with lots of traffic behind you.